ARCHAEOLOGIA

OR

MISCELLANEOUS TRACTS

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AND SOLD AT THE SOCIETY'S APARTMENTS IN BURLINGTON HOUSE, LONDON

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By Reginald A. Smith, *Esq., F.S.A.*

Read 23rd November, 1911.

Since the extensive find at Aylesford, published by the Society in 1890, there have been numerous isolated discoveries of pedestal and other urns, especially in Essex and Kent, most of which have found their way into Colchester Museum; but nothing that could be said to throw any new light on the Early Iron Age of Britain was met with till 1906, when burial vaults were discovered at Welwyn (fig. 1). To ensure greater privacy the late Mr. George Edward Dering,[1] of Lockleys, arranged for the diversion of the station road which passed the lodge-gates of his park; this operation involved cutting through a chalk hill capped with gravel, which proved rich in Late-Celtic remains. Unfortunately for archaeology, the excavations were not supervised with this end in view, and much was no doubt destroyed or overlooked by the workmen. An important series, however, of which a list is given below, came into the hands of Mr. Dering, who questioned the foreman as to their position and grouping, and the following account is based on notes taken by the present writer of Mr. Dering's statement in January, 1907. They are supplemented and in part corrected by information given to Sir Arthur Evans by Sir A. Scott-Gatty, Garter King of Arms, who did all in his power as a resident at Welwyn to rescue the antiquities and to preserve a record of the circumstances in which they were found. The discovery was also communicated by him to Sir John Evans, who visited Lockleys with the President to make an inspection of the objects in December, 1906. They were then in a lamentable condition, and remained so till Mr. Dering's death in January, 1911, after which, by desire of Mrs. Alfred James Neall, Mr. Dering's daughter and heiress, they were removed to the British Museum, to be presented to the Trustees after being exhibited to the Society. For this generous addition to the national collection Mrs. Neall has earned the gratitude of all archaeologists concerned with Ancient Britain, and special thanks are also due for the interest and intervention of our Fellows Sir A. Scott-Gatty, Sir Arthur Evans, and

[1] A biographical notice appeared in *The Times*, 13 Feb., 1911, p. 6.

Prof. Boyd Dawkins, all of whom with the President helped to bring the negotiations to a happy issue. The suggestion that the series should be exhibited to the Society was first made by the hon. Curator of St. Albans museum, our Fellow Mr. Page, who communicated on the subject with the family solicitor.

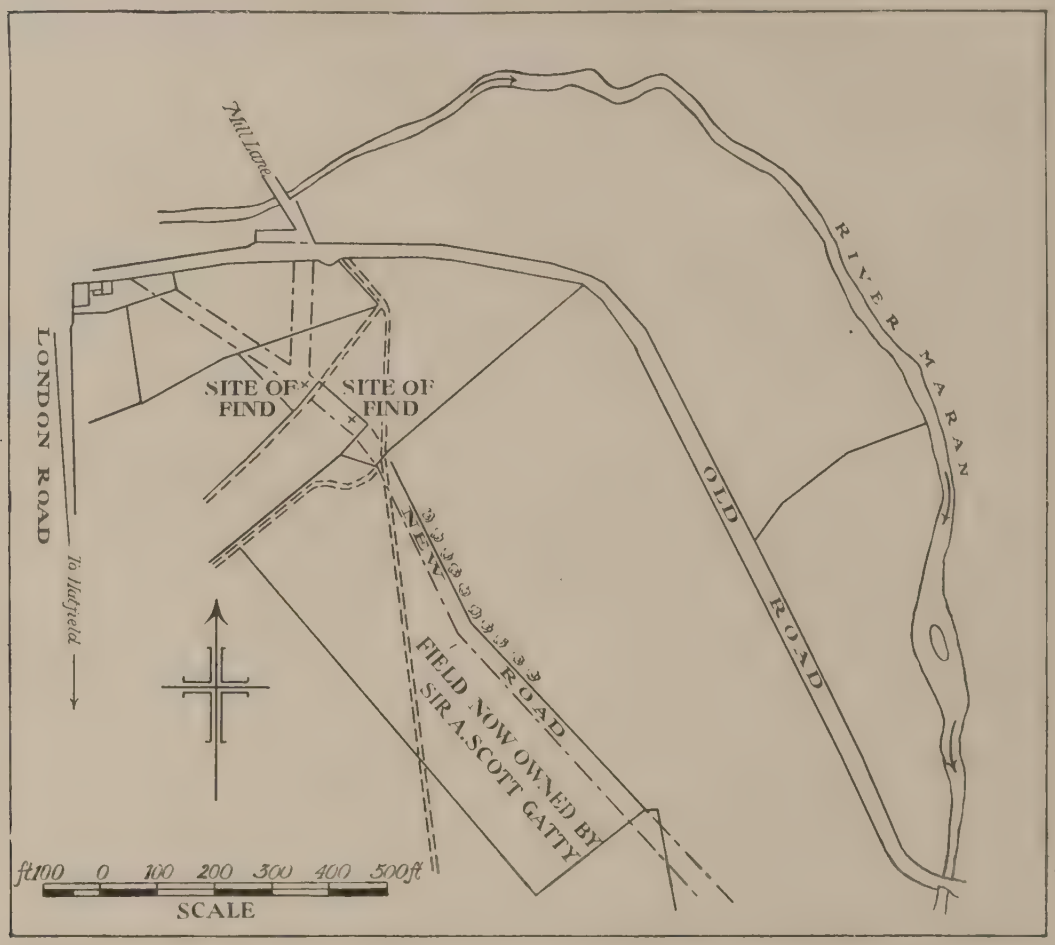


Fig. 1. Plan showing sites of discoveries at Welwyn, Herts., 1906 (kindly supplied by Mr. T. E. Moore, Surveyor, Welwyn R.D.C.).

Comparison of the rough notes taken of the discoveries has disclosed certain discrepancies only natural under such conditions, and the grouping below may be incorrect in some particulars, though the main facts are established. In any case the objects recovered are, with one exception perhaps, contemporary; and the precise distribution in the burial vaults is a matter of secondary importance.

Summary of Late-Celtic Finds at Welwyn.

First vault
(*discovered Oct.* 1906).

1. Amphora, deep red (p. 4).
2. Fire-dogs (p. 5).
3. Bronze bowl with separate base and two odd handles (p. 16).
4. Three bronze masks (p. 21).
5. Handle of smaller bronze jug (p. 20).
6. Cordoned pottery tazza (p. 25).
7. Base of pedestal urn (p. 23).

Separate burial.

8. Pedestal cinerary urn (p. 23).
9. Barrel-shaped vase (p. 26).
10. Two bowls with burnt bones (p. 26).

Second vault
(*discovered* 27 *Nov.* 1906).

11. Amphorae, five, light coloured (p. 4).
12. Fire-dogs, two (p. 5).
13. Iron frame (p. 13).
14. Patella, long handle (p. 18).
15. Handle of larger bronze jug (p. 20).
16. Tankard and bronze handle (p. 21).
17. Bronze ring with rivet (p. 16).
18. Pair of silver vases (p. 20).
19. Pair of silver kylix handles (p. 20).
20. Bronze domes, two sizes (p. 23).
21. Pedestal cinerary urn (p. 23).
22. Cordoned pottery tazza (p. 25).

Separate burial
(*discovered* 1 *Dec.* 1906).

23. Small pedestal urn (p. 23).
24. Vase with oval body (p. 24).
25. Small pottery tazza (p. 25).

The dimensions of the two vaults in which most of the objects had been deposited with the ashes of the dead were not ascertained, except that the floor of both was 5 ft. from the surface. Some weeks after the first vault was discovered, another yielded a still more important series of antiquities, but was not examined with any greater care; and within a few days at least one burial after cremation was found, from which a large cinerary urn of the pedestal type and other pottery vessels were recovered. Sir Arthur Evans suggests that the two smaller groups really belonged to a 'family-circle' of burials as at Aylesford, distinct from the more richly furnished vaults.

Such are the scanty details on record of a discovery that is practically left to tell its own story; but before a fuller description of the specimens is given, it will be well to mention a few facts throwing light on the early occupation of Welwyn. Reference is made in Sir John Evans' Archaeological Survey of Herts. (*Archaeologia*, liii. 250) to an ancient road called by Clutterbuck the White Way, that ran from Watford through St. Albans north-east to a point beyond Welwyn, where it turned north through Stevenage to Baldock. This highway was used, if it was not first constructed, by the Romans, for their burials have been found in close association with it. Cinerary urns with pottery vessels bearing potters' names have been disinterred 150 yards north of Welwyn Church; and from the

cemetery pottery fragments, three wrought-iron clamps for binding timber, the handle of a large amphora, and indications of fire have been recorded.[1] As Verulamium, on the west side of St. Albans, was the capital of Britain in Julius Caesar's time, and the Welwyn vaults contained the bones of important persons, it is quite likely that the road to St. Albans is pre-Roman, and that intercourse between Welwyn and the head-quarters of Cassivellaunus and Tasciovanus was frequent and expeditious.

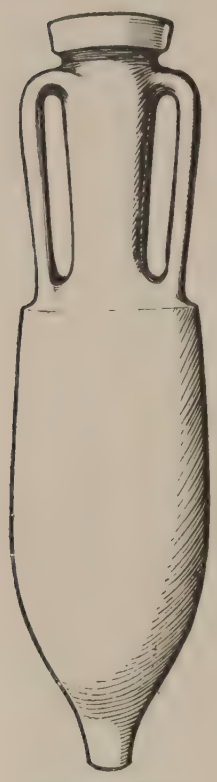


Fig. 2. Amphora, Welwyn. $\frac{1}{10}$.

It is not proposed to describe the finds in the order of the foregoing list, the numbers being merely for purposes of reference, but rather to deal first with two groups that are intimately associated—the amphorae and the fire-dogs; then the iron frame which also has foreign affinities. Another group consists of Italo-Greek vessels imported from Campania, which afford better chronological data than the purely British products which will be next described, viz. a few bronzes and the pottery, cinerary and otherwise; and, lastly, the further history of several types represented at Welwyn will be traced in finds at home and abroad, to show the continuity of civilization which even the barbarian invasions did not wholly interrupt.

The amphorae (nos. 1 and 11) were all of the same type (fig. 2), though the five found together were of paler ware than the other. One was recovered nearly perfect, but all have now been restored, and range in height from 45 in. to 47 in. This pattern with cylindrical body more or less angular at the shoulder and pointed below, is rare in Britain,[2] and may be considered of Greek origin, as opposed to the Roman globular pattern common in cremated burials.

An approximate date is afforded by three finds on the Continent which are selected for quotation here as specially relevant. In 1890 the burial of an important personage was discovered in a cellar-like tomb 6 ft. by 4 ft. 3 in., formed of rough stones, at St. Audebert, canton Braisne, near Soissons, Aisne.[3] Round

[1] *Antiquary*, Dec. 1908, 444; Jan. 1911, 6, and Feb. p. 53. Though the Lockleys series is alluded to (p. 8), the illustrations show that the burials described as Late-Celtic were really Romano-British. A Roman villa has been found in the Rectory garden.

[2] One precisely of this pattern was found at Park Field, Lexden, Essex, and is preserved in the Colchester Museum. Another, in Dorchester Museum, was found in the backwater at Weymouth, 8 ft. deep in sandy clay between the tunnel and the dam, in mid channel. Another is reported from Aston Clinton (*Records of Bucks.*, iv. 147). The body of another from Welwyn is figured in the *Antiquary*, 1911, 56.

[3] Moreau, *Album Caranda*, nouv. sér., pl. 113.

an elegant urn,[1] 10 in. high, of pedestal type, containing the ashes, were ranged six pottery vases (some with animal bones), five glass beads, a heavy bronze ring, two iron brooches with chain, an amphora 45½ in. high, resembling those from Welwyn, and a bronze circlet with radiating tabs. The brooches may be assigned to the latter part of the first century B.C., and one of the vases is of the same peculiar type as one found at Sandy, Beds., with a bronze brooch of about the same date.[2]

Such amphorae were no doubt exported all over western Europe and the Mediterranean lands from the regions producing wine or olive oil; and a hoard has been found at Vid, the ancient Narona, in Dalmatia, near the Adriatic coast. They were deposited in two layers one over the other in what was doubtless a wine-cellar in a building referred to the middle of the first century B.C., as it existed before the Forum was laid out, and near the amphorae was a drachma of Dyrrhachium which was current about 25 B.C.[3]

A third continental find is the best dated (p. 6), and shows amphorae of exactly the same type in a Gaulish capital midway between Marseilles and Boulogne. Bibracte (Mont Beuvray), later called Augustodunum (Autun), has produced sufficient specimens[4] to show commercial relations with a common centre.

Three iron fire-dogs or andirons (nos. 2, 12) were unearthed in good enough condition to enable a restoration to be made in wood, which exactly represents all three. The distance between the uprights (pl. I, fig. 1) is 42 in., the extreme length at the top 53½ in., and below, 40 in. While the uprights and arched feet are made of 2 in. by ¾ in. bar, the cross-bar is of oblong section 2 in. by 1½ in., and is 6 in. from the ground, the tips of the animals' horns terminating the uprights being 38 in. from the ground. The horns are knobbed, as often on bulls' heads of this period, especially in Celtic Europe, and attention has more than once been drawn to this interesting feature.[5] The animal in question is evidently modelled on the bull, though the mane or crest on the Welwyn and some other specimens suggests the horse or boar,[6] both animals often portrayed with more or less accuracy by the Celtic peoples. M. Salomon Reinach has pointed out that models of Gaulish bulls have knobs on the horns,[7] a good example in bronze being that found at

[1] *Early Iron Age Guide* (Brit. Mus.), fig. 19

[2] *Proceedings*, xx. 350.

[3] *Jahrbuch für Altertumskunde* (Vienna, 1908), ii. 91, fig. 5.

[4] Bulliot, *Fouilles du Mont Beuvray*, Album, pl. xix, figs. 1 (height 3 ft. 11 in.) and 2; xxix. 11. Many stamps on amphorae are given on pl. lx.

[5] The Ham Hill bull's head (*Proceedings*, xxi. 133) is slightly different, but the Birdlip knife-handle is a typical example (*Archaeologia*, lxi. 332).

[6] For similar mane on horses, see *Archaeologia*, lii, pl. xiii, figs. 2, 3; horses and boars on coins *passim* in Hucher's *L'Art Gaulois*.

[7] *L'Anthropologie*, 1896, 553, and figs. 382-4, p. 178.

Aulnay, Chavanges, Arcis-sur-Aube. But knobbed horns were not confined to the Gaulish area, nor indeed to bulls, but occur on human figures; and specimens from Denmark, Worms, and Sardinia have been published more than once.

A useful list of iron fire-dogs is given with the following references by M. Déchelette in a recent memoir on the origin of the Drachma and Obol, p. 46.[1] A pair of uprights with sockets for the missing cross-bar was found 3 ft. deep in peat at Wauwyl, near Willisau, Canton Lucerne, and is now in the Prehistoric Museum at Basle.[2] The entire height is only 21 in., the bar having been 5½ in. above the ground; and the animal's head is furnished with knobbed horns, a feature also found, for example, at Giubiasco (Ticino) and Bibracte (Mont Beuvray, Saône-et-Loire) on objects other than fire-dogs in the late La Tène period.[3] At Beilngries, about 28 miles west of Ratisbon in the Upper Bavarian Palatinate, an unburnt burial of the late Hallstatt period[4] contained fire-dogs and a bundle of spits, a large number of pottery vessels, a shield-boss, dagger, belt-mounts, bridle and horse harness, with bones of the horse and pig.

Fire-dogs have been found on two sites in Bohemia: at Horzowitz, 28 miles south-west of Prague, an example with arched feet at each end and a support in the middle of the cross-bar,[5] evidently of La Tène I date; and at the stronghold (Hradischt) of Stradonic, 20 miles south-east of Prague, fragments have been met with that can be dated with some accuracy, though authorities are not agreed as to the limiting dates[6] of this site, that belongs to the close of the La Tène period. Some iron fragments from the well-known settlement at Gurina, in the upper valley of the Gail, Carinthia, have been considered parts of fire-dogs, and others are referred to in a paper by Dr. Meringer,[7] who traces the use of fire-dogs down to modern times. The usual German name is *Feuerbock*, which recalls the ram's-head terminals from Mont Beuvray (Saône-et-Loire) and Commelles (Marne), while horses' heads occur on examples from Este, Bologna, associated with objects of Montelius' third period (Arnoaldi and Certosa).[8]

There is a bare record of similar discoveries at Vienne in France (Lyons Museum); and the curious ironwork found at Arras (Artois), and referred to below (p. 13), brings us well on the road to Britain. Fire-dogs in fragmentary condition

[1] *Revue Numismatique*, xv (1911), 46.

[2] J. Heierli, *Anzeiger für schweizerische Altertumskunde*, viii (1906), 271.

[3] Reinecke, *Mainzer Museum Festschrift*, 91, 107, pl. vi, fig. 10; other references in his note 147.

[4] *Archiv für Anthropologie*, &c., new ser., vol. v (1906), Correspondenzblatt, 128: discovered 1901.

[5] *Anzeiger für Kunde der deutschen Vorzeit*, 1865, 183, with plate.

[6] Pič, *Le Hradischt de Stradonitz* (trans. Déchelette), pl. xxxviii, fig. 26; xxxix. 2. According to the author the site was occupied from 15 or 5 B.C. to A.D. 25 or 50; and according to the translator it was destroyed 10 B.C.

[7] *Mitteilungen der anthropologischen Gesellschaft in Wien*, xxi. 143–6, fig. 181 (Salurn, Tyrol); xxii. 105; xxv. 57, 127. For Gurina fragments see vol. xxi, figs. 172–3; Este, figs. 175–6.

[8] *La Civilisation primitive en Italie*, i. 278, pl. lvi, fig. 15.

MODELS OF THE FIRE-DOGS AND IRON FRAME BELOW

Presented by the Society of Antiquaries of London, 1915

and without the animal-head terminals were found with other Late-Celtic objects, principally of bronze, at Belbury Camp, Higher Lychett, at the north-west angle of Poole Harbour, Dorset[1]; and the portions now in Dorchester Museum show an arched foot with portions of the upright and cross-bar.

Another specimen (fig. 3), closely allied to those from Welwyn, but still more elaborate, was found at Capel Garmon, Denbighshire, and was well published

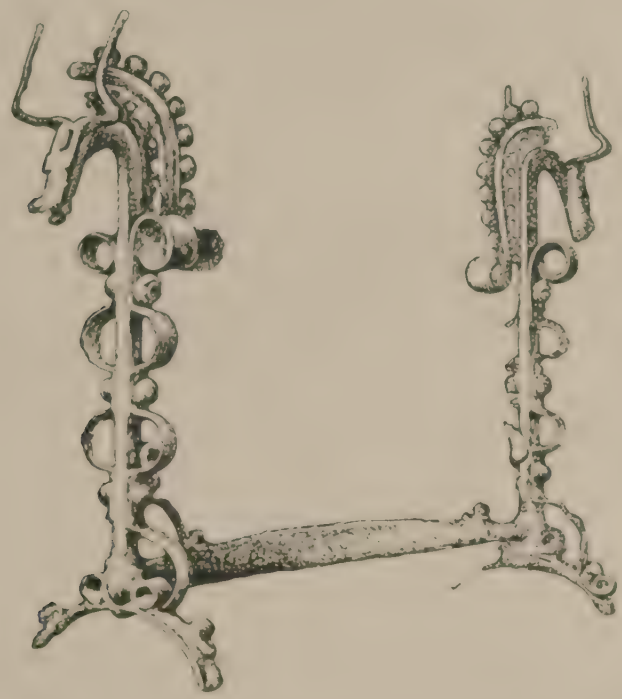


Fig. 3. Fire-dog found at Capel Garmon, Denbighshire. ¼.

by our late Fellow Mr. Romilly Allen, who made some use of an earlier paper by Mr. J. Evans.[2] In 1852 this double fire-dog of elaborate design was found lying flat on its side with a stone at each end on a clay subsoil at Carreg Coedog Farm, four miles south-east of Bettws-y-Coed railway station on the north side of the road along the river Conway. It is preserved at Voelas, the residence of Col. Wynne Finch, near the same town. This specimen, of which a figure is given by permission, has the uprights made of 1¼ in. square bars, the top being bent

[1] *Archaeologia*, xlviii. 117: most of the other objects are illustrated.

[2] *Archaeologia Cambrensis*, sixth ser., i. 39; third ser., ii. 91. The illustration (fig. 3) has been kindly lent by the Council of the Cambrian Archaeological Society.

outwards in the form of an animal's head with horns, and a mane or crest indicated by a row of knobs along the outer edge of a pierced plate. Both uprights have an iron band attached to each side and bent into semicircular loops with rivets between them, both ends being spirally coiled. Each head is $5\frac{1}{2}$ in. wide across the horns, and the cross-bar measures with the two uprights 2 ft. 10 in. The height including the arched foot is nearly 2 ft. 6 in. The domed rivet-heads correspond closely to those on the Welwyn iron frame, and Mr. Allen adduced three other instances of the horned animal's head on fire-dogs in Britain, which are noticed below. For the knobs on these horns he also cited examples other than fire-dogs from the Continent of the Late Bronze and Early Iron periods; and remarked on the frequent association of fire-dogs with amphorae. In this connexion the following discovery may be cited, though the association is in this case not so well authenticated as in some others.

In the summer of 1817 Prof. E. D. Clarke opened a large tumulus called Hay Hill, adjoining the Roman road west of Cambridge, beyond Barton towards Wimpole.[1] On the floor of the grave, about 9 ft. from the summit, were found the remains of a human skeleton, the head separated from the body, and now preserved in the University library. Near the spot had previously been found a chain with six collars for conducting prisoners,[2] and a pair of fire-dogs measuring 20 in. along the bar between the uprights and 2 ft. 5 in. in height, the animal-head terminals being furnished with knobbed horns. In 1818 a cremated Roman burial, within an amphora covered by a slab, was also found in the vicinity of the tumulus; but no further details are given with regard to the fire-dogs, and the other discoveries do not seem to have had any connexion with them, though the amphora may possibly have been originally associated with the fire-dogs as at Welwyn, but discovered and otherwise utilized in Roman times.

Fire-dogs and other antiquities were found together in 1849 about a quarter of a mile south-east of the mount which gives its name to the parish of Mount Bures, on the right bank of the Stour, about midway between Colchester and Sudbury. The discovery was recorded by Roach Smith in *Collectanea Antiqua*, ii. 25; and plates and illustrations in the text add to the value of the record, which was based on the testimony of eye-witnesses. The excavation was triangular, each side being a little over 7 ft., and the floor was on an average $4\frac{1}{2}$ ft. from the recent surface. The accompanying ground-plan (fig. 4) shows two groups of three amphorae with their necks (where perfect) lying on the cross-bars of two fire-dogs. These cross-bars were 2 ft. 2 in. long, measured from the outside of the

[1] *Archaeologia*, xix. 61, pl. iv.

[2] See fig. 13, *loc. cit.* Another example, from Colchester, is in the Castle Museum there: a similar chain was found with shackles at Bigbury, near Canterbury (*Archaeological Journal*, lix. 216, figs. 6, 7), and at Chesterford, Essex (*ibid.*, xiii, pl. 2, figs. 21, 22; pl. 3, figs. 31, 32).

uprights which were 3 ft. 6 in. high with the arched foot,[1] and terminated in ox-heads with bronze knobs on the tips of the horns. The series of rings on the plan denotes the position of pottery plates, some being in two or three layers on the floor, from 4 ft. to 4 ft. 9 in. from the surface. The position is also indicated of a wooden casket (decayed), furnished with bronze handles, hinges, and mounts (*Coll. Ant.*, ii, pl. XII), and containing a long bead of opaque green glass with octagonal section, also a glass bottle said to have been inlaid in several colours, but in all probability merely iridescent from decay. The amphorae were much of a size, the two perfect specimens being 32 in. high; the bodies of four were

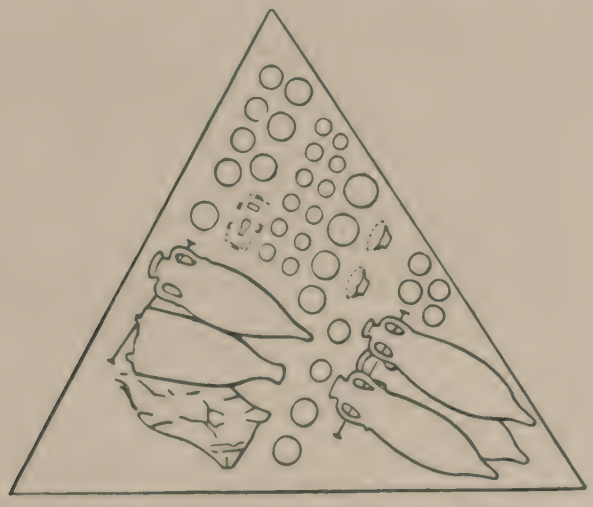


Fig. 4. Ground-plan of vault, Mt. Bures, Essex.

apparently of olive form with a sharp pointed base, another having an angular shoulder and blunt base. Our Fellow Dr. Laver has seen some inch-square iron bars from this burial, but everything except the fire-dogs now in the Castle Museum at Colchester seems to have disappeared. The bars referred to may well have been the standards of a tripod like that in one of the Stanfordbury deposits.

The accompanying illustrations (figs. 5, 6) are intended to show in perspective the arrangement of the grave-furniture in two vaults discovered in 1845 at Stanfordbury, 1¼ miles north-east of Shefford, Beds., as described by the late Sir Henry Dryden. The numbered plans are copied from his paper, while the objects are drawn to scale from his coloured plates.[2] Though obviously later,

[1] A stay has been added at the bottom since the discovery. The extreme length is 38 in., the distance between the uprights 21½ in., and the bars are uniformly 2¾ in. wide. There are no signs of a mane or cresting. Illustrated in *Archaeologia Cambrensis*, 6th ser., xii. 104.

[2] *Publications of Cambridge Antiquarian Soc.*, i (1840-6): 'Roman and Roman-British remains at and near Shefford, Beds.' (1845), 15, plates 2, 3.

they present many points of resemblance to the Welwyn finds, imperfect as the record is; the pottery dishes, for example, numbered some dozens, but are here represented by single specimens, which must be understood to stand for groups. Two oblong vaults were discovered in 1832 and 1834 respectively 30 ft. apart, both measuring approximately 15 ft. from north to south, 12 ft. from east to west, and 5 ft. in depth. The sides were perpendicular but not walled, and the floor was paved with Roman tiles in both cases. Along the north wall of the first were ranged six amphorae, one at least measuring 2 ft. 8 in. in height, and a ball of pitch was found at the bottom of one of them. The two fire-dogs (andirons) close to the western wall were about 2 ft. 7 in. in height and length, and were accompanied by four spits of elaborate form and six boiling-pots, the forms of which are not indicated. In the corner was an iron tripod 4 ft. 3 in. high, with six hooks hanging from the top[1]; and what was taken for scale armour lay in the middle of the south side. The east wall was lined with pottery and 'Samian' ware dishes, some having the ivy-leaf design in slip round the border, and towards the centre were a bronze jug with trefoil lip inverted on a piece of wood, four white counters or draughtsmen $\frac{3}{4}$ in. in diameter, a bronze bowl 3 ft. in diameter on wood, and a skillet or patera $10\frac{1}{4}$ in. in diameter and $7\frac{1}{2}$ in. deep, with handle 8 in. long and a round hole at the end.[2] A knife $6\frac{3}{4}$ in. long with bone handle and a flute made up of several bone sections were also found, the latter recalling the 'objects of bone like bobbins' found in the Arras vault (p. 13).

The second vault at Stanfordbury lay to the south, and was less richly furnished. Though probably of later date, it belonged to the same Roman civilization; and looking from the north side of the vault, one would see a pair of amphorae standing against the middle of the opposite wall, and an iron bar at either end. Their use is not apparent, but they are described as $\frac{1}{2}$ in. square with a knob at the top, 2 ft. 5 in. long, with pairs of staples rusted on each at two places. Though found about 12 ft. apart they may have originally belonged to a square frame like that from Welwyn, but provided with wooden bars into which the staples would pass. The two other uprights were not found, but if the above explanation is correct it is evident that the frame was not intended to stand in or near a fire, and the sacrificial table theory becomes still more likely.

With the bronze mounts and plating of a casket were studs and beads, the latter including some of the common 'melon' variety; and further north was

[1] The hooks resemble those found in Late-Celtic surroundings at Bigbury, near Canterbury: *Archaeological Journal*, lix. 215, pl. ii, fig. 5. The rods were twisted like the ornamental parts of the Welwyn frame, and other specimens have been found abroad of the same period: V. Gross, *La Tène, un Oppidum Helvète*, 44, pl. viii, fig. 3. For Silchester specimen, see *Archaeologia*, lvi. 242.

[2] This type is referred by Willers to the middle of the first century, especially the reigns of Claudius and Nero: *Neue Untersuchungen über die römische Bronzeindustrie von Capua und von Niedergermanien* (1907), 77–8.

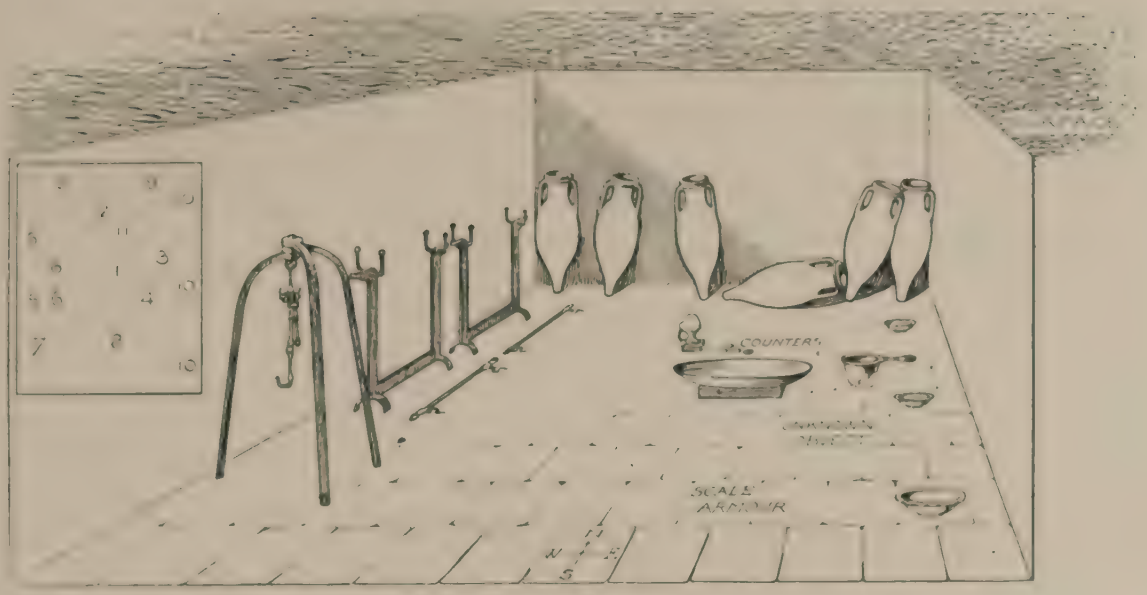


Fig. 5. View of first vault at Stanfordbury, Beds. (after description by Sir H. Dryden).

Fig. 6. View of second vault at Stanfordbury, Beds. (after description by Sir H. Dryden).

a pale green pillar-moulded glass bowl resting on its side. Near it and towards the centre of the vault were three glass vessels—blue and green bottles and a two-handled cinerary urn of violet colour. Near these was a shale armlet 4½ in. in diameter; on the eastern side were a few 'Samian' dishes, and along the north wall some smaller objects not accurately described. Two bronze domes

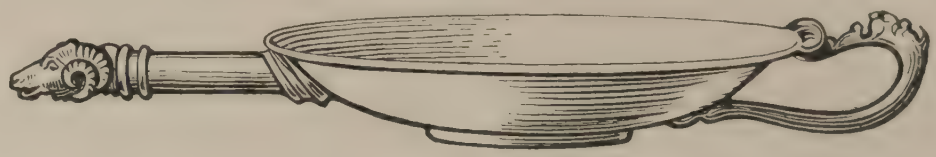


Fig. 7. Bronze patera, Stanfordbury, Beds. (diam. of bowl 8½ in.).

are mentioned with cement inside: but for this addition they might have been compared with those found at Welwyn, probably fixed originally over iron rivet-heads. Two silver buckles with plates and a harp-shaped brooch cannot be represented with certainty, and some doubt exists as to the coin attributed to Titus (A.D. 79–81). From a reference to the *Graphic Illustrator*, the red-ware dishes appear to have been of form 31 (Dragendorff).

Fig. 8. Roman glass, Stanfordbury, Beds. ¼.

Other objects from Stanfordbury illustrated in the original account are here reproduced, though not necessarily connected with either of the vaults. The patera (fig. 7) is somewhat peculiar in having a second handle, and is no doubt earlier than the common type with reeded handle ending in a ram's head; while the two ribbed glasses (fig. 8) are probably not earlier than the Roman conquest.

Besides a number of Merovingian burials, there were discovered in 1879 at St. Nicolas-lès-Arras[1] near the Roman road from Arras to Hénin-Liétard in Artois, four pits in a line, at intervals of 33 ft. The shallowest was 3¼ ft. deep, but unfinished; the others were of twice the depth and evidently burial vaults of the Roman period. Each was 12 ft. or 13 ft. square, and contained remains of the pyre, unburnt animal bones, and many utensils, the arrangement being different in each case. The ashes of the dead were enclosed in an urn of bronze or pottery, or else in a casket, but not placed in the centre of the pit; and bones in pottery vessels included many of the dog, pig, fowl, and small quadrupeds. In each pit was a bronze ewer, and amphorae placed upright in the corners, 4 ft. in height, with solid matter within that was recognized as the residue of

[1] Quicherat, *Mélanges d'Archéologie et d'Histoire—Antiquités Celtiques, Romaines et Gallo-romaines* (Paris, 1885), 423: the iron frame is figured, p. 430; *Revue des Sociétés Savantes*, 1879.

oil. One bore the stamp D.A[illegible]W. Pottery dishes and vases were numbered by dozens, but not specially described. In two cases the centre of the pit was occupied by an iron frame (fig. 9) of four upright rods 18 in. high, held together by bands of iron forming a square of 17 in. The uprights ended in antennae-like projections outwards, and within was a third projection curved like a crozier-head. Vestiges of wood adhered to these last as well as to the bands of the frame; and in both were a pair of tongs and bone objects resembling bobbins.[1] One pit produced a set of carpenter's tools, and three coins are mentioned,

Fig. 9. Iron frame found near Arras, France. ¼.

though not assigned to any particular burial, Augustus (27 B.C.—A.D. 14), Agrippa (probably struck by Tiberius), and Tiberius (A.D. 14–37). No signs of planking or other protection were noticed, and the pits seemed to have been filled in with earth immediately after the interment.

The Arras burials are of special interest in connexion with Welwyn, though the coins, which may have been lying in the top soil, are unfortunately inconclusive. The two iron frames lead us to a discussion of the only known British specimen (no. 13), and are evidently connected in some way with the fire-dogs. Dimensions of the Welwyn frame (pl. I, fig. 2) are as follows:—Uprights 42 in. high and upper part 4 in. wide; the horizontal bands, oblong with rounded corners, measure 28¾ in. in front and 22½ in. at the side, with a constant width of 2 in. The front of each upright has a twisted iron bar 18 in. long and 0·9 in. across attached to it

[1] Possibly like the sections of a flute found at Stanfordbury, and figured by Sir Henry Dryden. *Pubns. Camb. Antiq. Soc.*, 1845, pl. 2, fig. 7, p. 18.

by two rivets, which also serve to fix the uprights to the cross-bars. The rivet-heads are 1½ in. in diameter and 1 in. high, one at least showing traces of ornamental pitting. Down the sides of each upright are twisted bars of the same character, 22 in. long, welded at either end. At the bottom of each upright the bar measures 2·5 in. by 0·7 in., and has been given half a turn, in a manner recalling the feet of a modern iron hurdle. Whether this was done, as at the present day, to give a firmer hold when sunk in the ground, is a debatable point; but though the feet spread outwards, it is not improbable that holes were made in the ground for their reception and the earth rammed round them so as to make a fixture. In support of this hypothesis it may be mentioned that if the plain feet were buried 12 in. deep, the proportions of the visible frame would be much more in accordance with those of the Arras example: 30 in. high by roughly 25 in. square, as against 18 in. by 17 in. square. The presence of the bull's-head terminals on the latter at first sight militates against the use of the frame as a table, and suggests complex fire-dogs, the ornamental features not suffering more from the flames than on the undoubted fire-dogs of Welwyn. The British framework, however, is ornamented down to the lower bar, both at the front and back, and the longer sides of the bars themselves are 13 in. shorter than the cross-bar of the Welwyn fire-dogs. The uprights of the frame would therefore be exposed to concentrated heat, and the whole apparatus seems singularly unsuitable for cooking or heating purposes. Again, in the second vault at Stanfordbury, two uprights 17 in. high were found with knobs at the top, perhaps corresponding to the obvious thickening at the top of all the Welwyn uprights; and at two places on each were rusted pairs of staples that cannot well have held anything but wooden cross-bars. It is possible that two others were placed in the other angles of the vault, and either destroyed or overlooked by the workmen; but the use of wood for a frame precludes the application of fire, and apart from the Welwyn frame it is hard to believe that the Stanfordbury bars were not used for the same purpose as the Arras frame. The latter is furnished with lappets on the inner side of each bull's-head terminal, and vestiges of wood were noticed adhering to the terminals and bands. It is not suggested that a tray rested on the bull's horns, but rather that the lappets correspond to the hooks preserved behind each terminal of the collapsible four-legged framework found at Sackrau, Silesia,[1] with an array of sacrificial utensils. Here any application of fire is out of the question, as the frame is slender and highly ornamental, being dedicated to the Divine Augustus.

Further evidence that frames of the Welwyn pattern were used at the same period in Italy, whence most of the accompanying sacrificial utensils were im-

[1] Grempler, *Der Fund von Sackrau*, pl. iii. The height of the front legs is 42¼ in., of the back legs 39¾ in. Cf. Ceci, *Bronze del Museo Borbonico*, pl. iv, fig. 3.

ported into Britain, is afforded by a frieze (fig. 10) published to illustrate the bronzes by Willers.[1] It is a marble relief from the amphitheatre at Capua, which was built in the reign of Augustus (27 B.C.–A.D. 14), and shows on the left a table with two sacrificial knives on the top, the rest of the panel being occupied by other accessories of sacrifice—bucket with arched handle, axe, sprinkler, priest's cap, and, on the right, a ram's head. In classical times the table was called *Anclabris*, and is depicted on a sepulchral monument from Lambessa, Algeria. It was usual at Athens in the latter part of the fourth century B.C., and folding examples are illustrated by Daremberg and Saglio.[2]

A fragment of bronze, otherwise unimportant, should be mentioned here, though it is not positively known to have come from the vault in which the iron

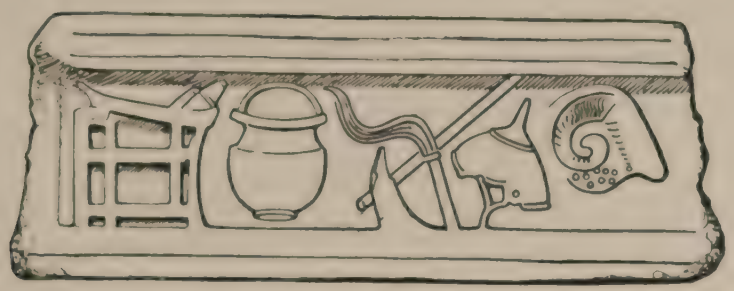


Fig. 10. Part of marble frieze from the amphitheatre, Capua. ⅛.

frame was found at Welwyn. It is a flat plate one tenth in. thick, and now about 7 in. by 5 in., but none of the original edge is preserved. It possibly belonged to a heavy tray placed on the upper band of the frame.

The bronze pail of the Capua frieze is not duplicated at Welwyn, but corresponds to finds of the Early Iron Age in Western Europe, especially in North Italy and in Germany, between the Upper Luhe and the Ilmenau, south of Lüneburg. They have been carefully studied by Willers, and shown to have gone north through Bohemia, the Boii exchanging them on the German frontier as early as 100 B.C., but not themselves carrying them further, else their peculiar coins would also have come to light in Germany.[3] With the buckets was exported the frying-pan type of patella represented both at Welwyn and Aylesford, and evidently of foreign manufacture. The centre of their distribution has been shown by Sir Arthur Evans to have been the Venetic area, at the head of the Adriatic.

Though a foreign bronze pail of much earlier date has been found in England,[4] the type with dolphin or heart-shaped attachments for the handles has not yet been brought to light, but that such existed here may reasonably be inferred

[1] *Neue Untersuchungen*, pl. v, fig. 4.

[2] *Dictionnaire des Antiquités*, vol. iii, 1720, figs. 4903, 4909, 4910; vol. i, 266, fig. 317.

[3] Willers, *op. cit.*, 27.

[4] *Proceedings*, xxi. 464; *Surrey Archaeological Collections*, xxi. 165: probably of the seventh century B.C. (Hallstatt period).

from a few solid bronze feet of peculiar form, which are seen in position on several published specimens. Two of these feet, found at Colchester and in Surrey, are now in the British Museum, and the type is dated by the occurrence of several at Stradonic.[1]

Certain features of the bronze bowl from Welwyn (no. 3) are uncertain, but there can be little doubt of the outline and general character of this eminently classical product (fig. 11). The circular base, 6·5 in. in diameter and 1·1 in. high, is separate, and moulded hollow in fairly heavy metal with egg and tongue border, the top being 3·8 in. across, slightly dished, and showing traces of solder. On this was evidently fixed a bronze bowl, of which two or three large fragments (giving a lip-diameter of 12·8 in. and height of 4·3 in.) seem to be preserved, besides several pieces of the stout lip, corroded and sometimes without the gabled portion (fig. 12). The edge was first thickened and furnished with a ridge, then bent over so as to form a double lip springing horizontally outwards from the sides of the bowl, and measuring 0·4 in. across. One portion shows clearly a right-angled bend at the bottom which was perhaps soldered to the heavy base. It is fairly certain that a finely moulded drop-handle 3·6 in. long and two rings (one still attached below the gabled lip) in which its ends work freely, belonged to this bowl. A companion handle may have been lost and replaced by a plain stout bronze ring found in association, 2·9 in. across, with a break 0·4 in. wide for attachment to a lug; but it is also possible that the vessel never had more than one handle, like one found containing the ashes in a burial at Bologna (Benacci group), together with a bronze bucket, a cup with stilted handle (fig. 13), an iron armlet, and other details.[2]

In this connexion should be mentioned a heavy bronze ring (fig. 14) with tang of oblong section, to the end of which is firmly attached a hollow domed terminal or bolt-head, in which remained a trace of wood. The ring has an outside diameter of 1·7 in. and is $\frac{1}{2}$ in. thick, the circumference having on either side of a hollow moulding a wavy line in relief within a groove. In this particular it resembles a stout ring of oval section recently found in peat under the south transept of Winchester Cathedral[3] (fig. 15). This measures 1·2 in. across, the opening being 0·7 in. and the thickness 0·3 in.

The Welwyn ring was apparently for lifting an object of some considerable weight, and possibly belonged to the wooden or bronze cover of a bronze pail corresponding to the Bologna example illustrated (fig. 13). If the trace of wood in the bolt-head is merely accidental, it is permissible to regard the loop as part

[1] *Le Hradischt de Stradonitz*, col. 77 (trans. Déchelette), pl. xxi, figs. 1, 2, 5–8.

[2] Brizio, *Tombe e Necropoli galliche della provincia di Bologna*, 465, pl. v, figs. 34, 36, 39: in *Atti e memorie della R. deputazione di Storia patria*, third ser., v (1887).

[3] *Proceedings*, xxiii.397.

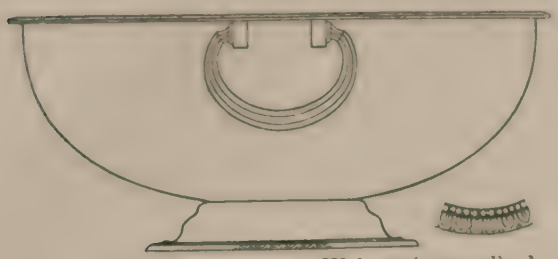


Fig. 11. Bronze bowl on foot, Welwyn (restored). ¼.

Fig. 12. Section of lip of bowl, Welwyn. ½

Fig. 13. Bronze bowl, bucket, and cup, Bologna. ⅛.

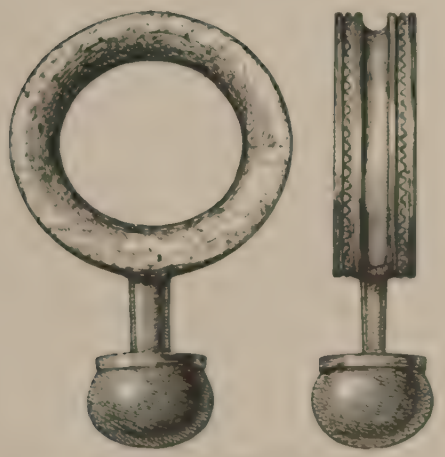


Fig. 14. Bronze ring with knob, Welwyn. ½.

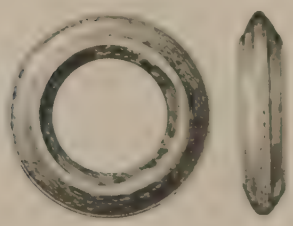


Fig. 15. Bronze ring, Winchester. ½.

Fig. 16. Typical bucket, Early Iron Age, Germany. ¼.

of the arched bronze handle of an ordinary Continental pail of this period[1] (fig. 16). The space between the dome and the ring, at the point where the ornament is interrupted for the tang, is 0·4 in., while the dome is 0·8 in. across and half an inch deep, the tang passing through and being hammered on the outside.

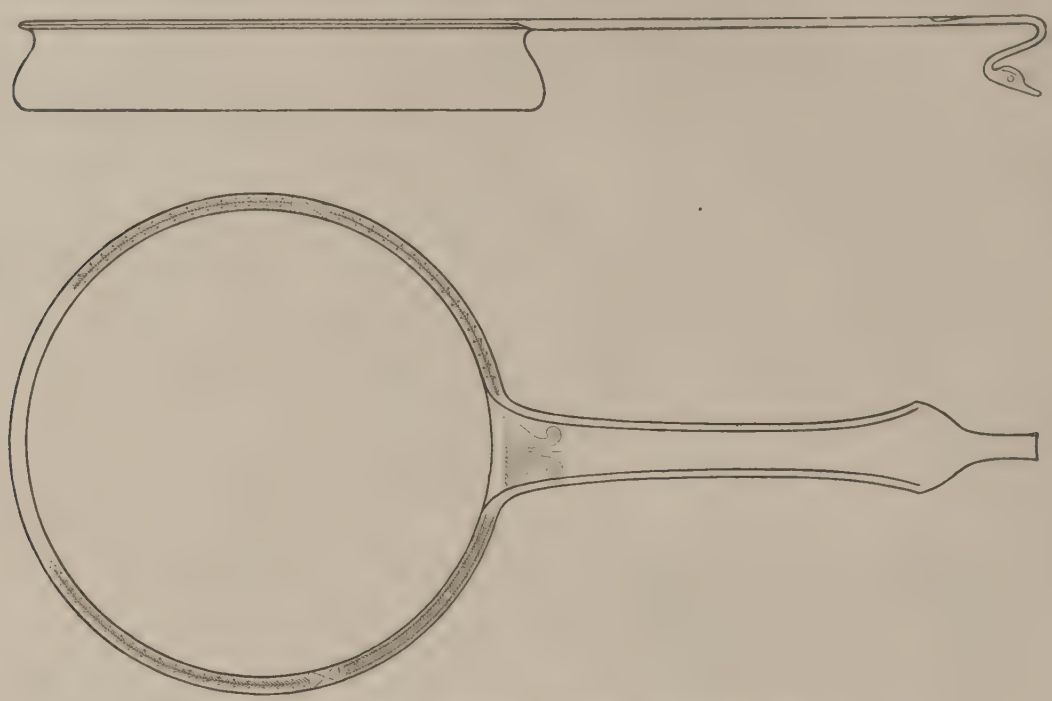


Fig. 17. Bronze patella (restored), Welwyn : side and top views. ¼.

The Welwyn patella (no. 14, fig. 17) is much damaged, but its dimensions and original appearance could have been determined even without the better preserved Aylesford example.[2] The entire length is 24 in., the diameter of the bowl outside the lip being 11½ in. The handle is convex on its upper face with stout flanges along both edges; and bent under its broader end is a terminal in the form of a swan's neck and head. This curious feature is exactly repeated at Aylesford, and is far from uncommon abroad, both on patella-handles[3] and on the arched handles of bronze buckets.[4] The thin bowl is almost entirely destroyed, but from analogy had a maximum diameter of 12·5 in. and a depth of

[1] Willers, *op. cit.*, pl. v, fig. 3 (Mehrum, Vörde, south of Wesel), and *passim*. Two with chains attached to the rings are figured by Montelius, *La civilisation primitive en Italie*, i, pl 104, fig. 1; pl. 109, fig. 1.

[2] *Archaeologia*, lii. 378.

[3] The Ornavasso example figured by Willers, *op. cit.*, fig. 12, no. 10, was found with a pail and bronze jug in a grave dated by coins of 150–134 B.C.

[4] Willers, *op. cit.*, 5.

2.1 in., the bottom being flat and the whole resembling a modern frying-pan. The lip is flat, not doubled over like the bowl, and for at least 13 in. on either side of the spring of the handle is engraved with herring-bone pattern flanked at intervals of ¼ in. by engraved rings. At the base of the handle is engraved a pattern that is probably a degenerate representation of the classical palmette, which passed into Celtic art.

Patellae of this kind have been found at Mezzano (Milan), near Hanau (east of Frankfort-on-Main) and at Nienbüttel (near Schenefeld, Schleswig-Holstein), but at least three come from Ornavasso (Ticino province), and are there dated by

Fig 18. Bronze jug and base, Welwyn (restored). ¼.

Fig. 19. Bronze jug, Welwyn (restored). ¼.

coins found in the same graves 150–100 B.C. It is to this period that Willers assigns the Aylesford example, being of opinion that this type of patella was on the whole earlier than the bronze pails with dolphin or heart-shaped attachments, which he places between 125 and 25 B.C. Sir Arthur Evans regards the Mezzano and similar patellae in Italy to be not later than the second century B.C.[1]

Another patella with terminal, of the same type but with a ram's head, was found in a grave at Dühren, Sinsheim, Baden, with a skeleton lying east and west 31½ in. below the surface.[2] With it or in a companion grave was a jug with mask below the handle, and an iron tripod about 5 ft. high resembling that found

[1] *Archaeologia*, lii. 379.

[2] Lindenschmit, *Alterthümer*, v. 80, pl. 15; *Zeitschrift für Ethnologie*, 1891, 81.

in the vault of Stanfordbury (fig. 5). Dr. Schumacher points out that these remains, with no signs of a tumulus, must be Gallic, not Germanic, and dates them not later than 100 B.C., the cultural stage being late La Tène II.

The two stout bronze handles found at Welwyn are in themselves sufficient evidence of two bronze jugs (nos. 5, 15) of a type very common at the period and imported from some Italian manufacturing centre such as Capua; but a large piece of the body is preserved, sufficient to give the profile of the larger specimen (fig. 18). This was about $9\frac{1}{2}$ in. high, the lip doubled over and bevelled, the slope being indicated by the two branches of the handle which embraced it. The arms are faceted, and end in conventional swans'-heads with eyes indicated on the upper side by means of a ring-and-dot. The handle, including its upper limb for the thumb, is 6·7 in. long, and was soldered below to the body of the jug, which had an extreme diameter of 6 in. A base originally 4 in. across, and probably belonging to this jug, is fortunately preserved, in the condition indicated in the illustration. The raised outside band served as a foot-rim, and the sunk centre is ornamented as usual with concentric rings turned on the lathe.

The smaller handle, found in another vault, evidently belonged to a similar jug, of which a conjectural restoration is given (fig. 19). The branches that embraced the lip are shaped in the same manner, but the eyes of the conventional swans'-heads are not indicated. The total length is $5\frac{1}{2}$ in., and the height of the jug calculated in proportion was about $8\frac{3}{4}$ in., with a maximum diameter of 5·4 in.

The classical origin of a pair of silver vases (no. 18) is also obvious. Though found in a battered condition with the feet detached, these are happily perfect (pl. II, figs. 1, 2), and show much finer work than the base of the large bowl decorated in the same style. They are both 4 in. high, with a maximum diameter of $4\frac{1}{4}$ in.; round the lip outside runs a band of egg-and-tongue pattern, and just below is a guilloche band between pearled borders. The feet, which were soldered to the body, have a bold beaded edging, above which is an egg-and-tongue band like that round the lip; and the short stem has mouldings. In profile it resembles a much larger specimen of bronze with a dedication to Apollo Grannus, found with burnt bones in a barrow at Fycklinge, Vestmanland, Sweden.[1]

With these should be mentioned two silver handles (no. 19) of stout metal, but devoid of ornament, of the usual form for a kylix; and the illustration shows them attached to a specimen kylix (fig. 20). They are 3 in. long, of circular section, flattened at the upper end and cupped at the points of contact below, the terminals being unequal on both. They weigh about 1 oz. troy each, and their original spread would be nearly 8 in. These and the bronzes already described show contact with the classical world, and whether directly or indirectly came from Campania where Greek craftsmanship,[2] or at any rate Greek tradi-

[1] Montelius, *Guide to Stockholm Museum* (trans. Derby, 1887), 68, fig. 114.

[2] Many of the Capuan craftsmen's names given by Willers are Greek.

PAIR OF SILVER VASES AND THREE BRONZE MASKS, WELWYN

Published by the Society of Antiquaries of London, 1912

tions, gave distinction to the banquet or sacrifice of Caesar's day, and produced the bronzes since recovered in quantity from the ruins of Pompeii. This traffic throws a new light on Caesar's statement with regard to the Britons, 'aere utuntur importato' (*Bell. Gall.*, v. 12, § 4), which can hardly refer to coins.

Of purely Celtic origin must be the three heavy bronze masks (no. 4) which are from one mould (pl. II, figs. 3–5), the length being 1·5–1·6 in., and extreme breadth 1·1 in. They are dished at the back and curved to fit some circular

Fig. 20. Silver handles, Welwyn, with specimen Kylix. ½.

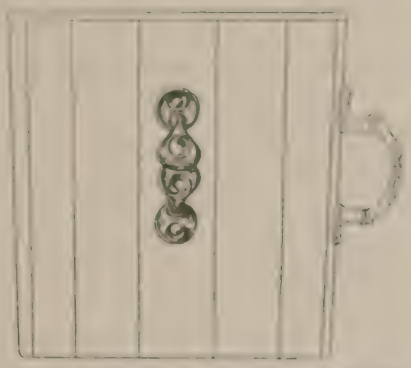


Fig. 21. Wooden tankard (restored) and bronze handle (front and side views), Welwyn. ½.

object, the diameter being calculated at 4·6 in. The weights are curiously graded:—1 oz. 120 gr. troy, 1 oz. 70 gr., and 1 oz. 20 gr., the heaviest having its edges corroded. The hair is indicated by straight lines from back to front, alternately plain and pearled, recalling certain British coins[1] with a barbarous representation of the head of Philip of Macedon; but as the head is nearly always in profile, the parallel is not complete.

The moustache is prominent and corded, and extends to the edges of the mask, while the eyes are outlined with pearled lines like those of the hair. Below the chin is a curious formation noticed also at the end of the silver-gilt eye-brooch found with an engraved mirror and other objects in a woman's grave at Birdlip, Glouc.,[2] and attributed to the middle of the first century A.D. Masks of the continental La Tène period in bronze and other materials have been noticed by P. Reinecke.[3]

The Late-Celtic tankard (no. 16, fig. 21) is already familiar from examples at

[1] Evans, *Ancient British Coins*, pl. D, 6–8; pl. viii. 6–9; pl. ix. 1, 2. Hair somewhat in the same style is seen on pl. K, 13, and pl. xvi. 6.

[2] *Archaeologia*, lxi. 341, fig. 9 (left). It is curious that the same arrangement indicates the hair of the three embossed masks on a sword scabbard from Marson, Marne (*Iron Age Guide*, 53, fig. 49).

[3] *Zur Kenntnis der La Tène-Denkmäler der Zone nordwärts der Alpen* (Mainzer Festschrift, 1902), 89, pl. vi, fig. 7.

Aylesford, Kent; Elveden, Suffolk[1]; Trawsfynydd (Tomen-y-mur), Merionethshire[2]; and the Thames at Kew; and several handles found separately are mentioned below. That the tankard sometimes had a single handle is shown by the discovery of one complete[3] in a tomb under one of the Bartlow Hills, Essex, associated with a coin of Hadrian (?). The Ornavasso specimen, found in the San Bernardo cemetery, which yielded so many classical bronzes, is described by Willers[4] as of Celtic origin, and dated by associated coins 104–84 B.C. It seems to have had only one handle, which has three contiguous rings in the middle, much like that from Porth Dafarch; and the staves were covered with bronze plates as at Aylesford and elsewhere. The Welwyn tankard was made up of staves, of which the widest measure 2 in. across, but the edges are not sufficiently sharp to show whether the vessel was cylindrical or expanded slightly towards the top, as at Aylesford. Though the lower edge is intact in most cases and shows the $\frac{1}{4}$ in. groove that held the bottom about $\frac{1}{2}$ in. from the edge, the upper part is wanting in all, and the height of the vessel cannot therefore be determined.[5] Two pieces of bronze edging with diameter $7\frac{1}{2}$–8 in. may have belonged to the lip, but the hoops have perished, and portions of the plating may perhaps be recognized in some thin curved fragments with a straight edge from the site.

It is evident that the Welwyn handle was attached by pairs of slender bronze pins to the tankard, not soldered to the bronze plating; and Willers remarks that the latter method was generally adopted in the Capuan workshops in preference to riveting, especially for the best pieces.[6] The modelling of the Welwyn handle is in good Late-Celtic style, with scrolls in high relief separated by the trumpet-pattern on the arch, the lip-pattern on the slender stems, and swelling rings with eccentric bosses[7] on the circular terminals. It is 3·6 in. long, of whitish bronze, and was evidently fixed vertically on the tankard, over the join of the bronze plating. The closest parallels are single examples found at Castor, Northants,[8] and at Hod Hill, Dorset, the latter showing traces of iron rivets. One with the arch in the form of conjoined rings is from Porth Dafarch, Holyhead; and another with more Celtic feeling and long flat ends with iron rivets also comes from Hod

[1] Both figured in *Archaeologia*, lii. 358, 359.

[2] *Arch. Cambrensis*, ser. 5, xiii. 212; J. R. Allen, *Celtic Art*, 151. Now in Mayer Collection, Liverpool Museum.

[3] Barrow II in *Archaeologia*, xxv, pl. iii, fig. 9.

[4] *Op. cit.*, 19, fig. 12, no. 8. It measures $4\frac{3}{4}$ in. both in height and diameter.

[5] The illustration is based on the Aylesford specimen, both the height and maximum diameter being about 8 in.

[6] *Op. cit.*, 23.

[7] For these patterns see *Early Iron Age Guide* (Brit. Mus.), 103, 143, and especially fig. 144.

[8] Artis, *Durobrivae*, pl. xxxvi, fig. 10. Except this, all mentioned are in the British Museum.

Hill.[1] Another with flat broad grip, from Greenhill, Weymouth, is apparently somewhat later in date. The only pairs come from Elveden, Suffolk, and Aylesford cemetery, and though rather formal are of excellent workmanship.

From the second vault came also thin dome-shaped caps of bronze in two sizes: two 1·5 in. in diameter and ½ in. high; and about fifteen 0·9 in. in diameter and 0·35 in. high. The larger would fit, but not entirely cover, the domed rivet-heads of the iron frame, but one at least of the latter was pitted by way of ornament, and all have been so rendered in the model, so that bronze caps would not be wanted for this purpose. There are no signs of attachment, hence it may be assumed that the caps fitted closely on some rivet-heads or other domed projections that can no longer be identified. Bronze caps or ferrules, somewhat similar but of stouter metal, were found in a hoard of scrap-metal at Santon Downham, Suffolk, deposited about 50 A.D.[2]

Other items of bronze may be mentioned here, though the association is uncertain. There are three pieces of a fairly stout bronze band, bent at a right angle, and apparently belonging to the lower edge of some circular vessel, the diameter being about 5 in. The band was 0·6 in. high, the horizontal part being narrower, and it possibly formed the lowest hoop of the wooden tankard; but on this hypothesis the vessel must have tapered considerably towards the base, as the presumed top edging gives a diameter of 8 in.

There is some doubt as to the grouping of the pottery, but none as to its origin and history: and it will be convenient to treat the specimens in groups according to type. The large pear-shaped vessels (pl. III, figs. 1, 2) that were generally, if not exclusively, used to contain the ashes of the dead, first claim attention (nos. 7, 8, 21). Two are practically complete, and have been restored from large fragments that gave an entire profile. They are practically a pair, but the taller has a better lip and is here illustrated in elevation and section (fig. 22). It is 13¼ in. high, with a maximum diameter of 10·8 in., the foot being 5·4 in. across and slightly sunk in the middle, but not dished. The other is 13 in. high, the maximum diameter 10⅝ in. and the foot 5¼ in. Both are of soft brown ware thrown on the wheel, and probably coated originally with a black varnish,[3] which is better preserved on some of the smaller pieces. The base (4·7 in. diameter) assigned to the first vault is sufficient evidence of a cinerary urn, and even apart from the burnt bones it is sufficiently clear that the vaults contained human remains. A smaller pedestal urn (no. 23, pl. III, fig. 9) was found with accessory vessels, and may have been used as a cinerary. It has a rolled lip and high shoulder; above the foot, which has a slight cordon, are alternate dull and burnished black bands; and the base is slightly dished. It is 7·4 in. high.

[1] *Early Iron Age Guide*, 123, fig. 103; Aylesford pair, 119, figs. 97, 98; Elveden, fig. 99.
[2] *Proc. Camb. Antiq. Soc.*, xiii. 151, fig. 5.
[3] *Archaeologia*, lii. 334.

and 5·6 in. at its widest. A slender variety of the same type, found in association with the last, is of burnished black ware (no. 24, pl. III, fig. 7), 8·9 in. high, with a maximum diameter of 5·1 in. It has a spreading lip, and a cordon both at the spring of the shoulder and on the foot; but is otherwise devoid of ornament.

Before the other forms are described a few words may be added as to the history and significance of these pedestal urns which are familiar to archaeologists from the Aylesford series and smaller finds in south-east Britain.[1] Sir Arthur Evans has demonstrated their descent from a type of bronze cist common in the

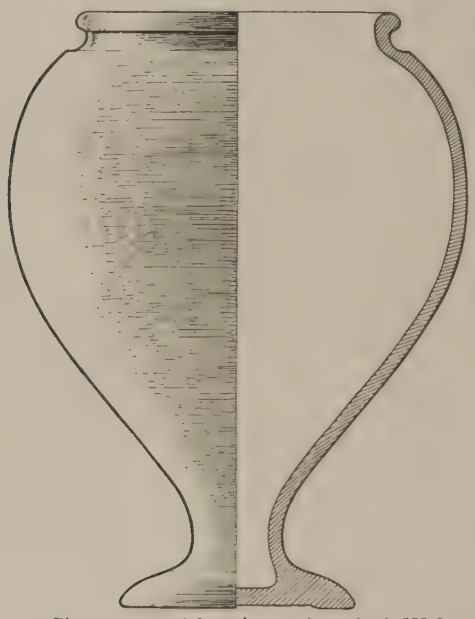


Fig. 22. Cinerary urn (elevation and section), Welwyn. $\frac{1}{4}$.

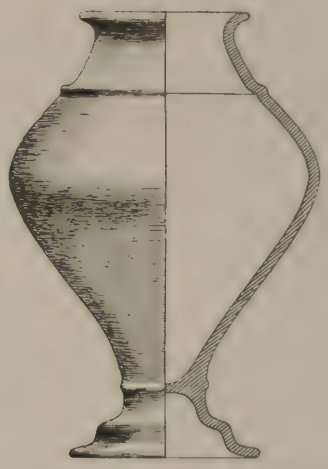


Fig. 23. Pedestal urn with section, Somme Bionne, Marne ($\frac{1}{4}$) (reproduced by permission of the Trustees of the British Museum, from the *Early Iron Age Guide*).

Illyro-Italic area at the head of the Adriatic, even minute characteristics being reproduced so far as the softer material allowed. The sharp angle at the shoulder, for instance, is necessarily softened in potting, but the cordons and zones persist for a considerable time, and may even be traced in the present examples which are separated by about five centuries and half Europe from the prototype. An intermediate stage is well illustrated by the Morel Collection from the Marne, now in the British Museum. Here in graves of the third and fourth centuries B.C. appear thin black urns with angular profiles that are evidently not far removed from a bronze original, and the pedestal urn with hollow foot (fig. 23) is approximately dated by brooches of early La Tène types. Cremation urns were introduced

[1] Besides those in Colchester and Maidstone Museums, pedestal urns have been found in fragments at Carshalton, Surrey (*Journ. R. Anthrop. Inst.*, N.S., viii. 393, figs. 4, 5); Cobham, Surrey (*Surrey Arch. Colln*s, xxii. 153, fig. 23); and near Rayleigh, Essex (see p. 27).

Two cinerary urns and tazza, Welwyn. $\frac{1}{8}$ linear

Pottery of various forms, Welwyn

Published by the Society of Antiquaries of London, 1912

into the Marne district evidently at a later stage,[1] and the only specimen in the collection[2] has still the pear-shaped body and pedestal, but a solid foot exactly like the Welwyn and Aylesford groups. In view of recent discoveries of other Champagne forms in the south of England,[3] it may be suggested that some at least of the Gaulish inhabitants of the Marne reached these shores by way of northern France. These Remi belonged to the Belgic part of Gaul, adjoining the Celtic area, and possibly adopted the rite of cremation about 200 B.C. The Belgic invasion of Britain began about that date, and it should be mentioned that cremation prevailed in Kent, Essex, Herts., and some neighbouring counties, while inhumation is proved by burials in Gloucestershire (Birdlip) and Yorkshire (Danes Graves). Typologically a rough test is afforded by the pedestal, which is hollow in accessory urns of the unburnt Marne burials, but practically solid in the cineraries of Aylesford and Welwyn. The discovery of intermediate stages of the pedestal, associated with datable objects, would greatly improve the chronology of the period, and throw fresh light on the track and identity of our Belgic invaders.

The tazza form of Late-Celtic pottery has been already noted in Britain[4]; and there is little doubt that it directly descended from a type represented in the Arnoaldi group at Bologna.[5] Two of the Welwyn tazzas (nos. 6 and 22) are practically a pair (pl. III, fig. 3). One is black and better preserved than the other, its height being 4·5 in. and diameter at the lip 4·8 in. The other is now brown like most of the Welwyn ware, 4·2 in. high and 4·0 in. across the lip. Both had a hollow foot, with a bead moulding on the lip and lower edge of the bowl, and a cordon in the angle between them. Vessels of this peculiar profile, either with or without the high foot, have been found elsewhere in south-east Britain,[6] and one now in the British Museum was found at Kelvedon, Essex, with a bronze brooch of La Tène III type, hence probably pre-Roman. A third tazza (no. 25) is of fine black ware, but brown where rubbed, 3 in. high and 4·2 in. across the lip (pl. III, fig. 5). It has a bead moulding on the lip and lower edge of the bowl, and incised lines in the angle, and the foot is low in proportion. This last, like

[1] Sir Arthur Evans has pointed out that the change took place in North Italy in the third century B.C., the earliest Gaulish graves at Marzabotto being inhumations, while incineration was general in the later period (*Archaeologia*, lii. 387).

[2] *Early Iron Age Guide* (Brit. Mus.), pl. iv, fig. 11.

[3] *Proceedings*, xxii. 509 (Broadstairs); *Records of Bucks.* 1908, 353 (Ellesborough, Bucks.), besides the pedestal urns already mentioned. The type most easily identified is illustrated in *Early Iron Age Guide*, pl. iv, fig. 8.

[4] As at Billericay and Shoebury, Essex (*Proceedings*, xvi. 259); Pitt-Rivers, *Excavations at Rotherley*, I, pl. xxxv, fig. 5; II, pl. cix, fig. 1; pl. cx, figs. 1, 3. Oare, near Pewsey, Wilts. (*Cat. Devizes Museum*, pl. xlix, fig. E, no. 874, pp. 99, 107).

[5] Montelius, *La civilisation primitive en Italie*, I, pl. 84, figs. 26, 27.

[6] For example, at Cobham, Surrey (*Surrey Arch. Coll.*, xxi. 202, fig. 8).

the others, was hollow and evidently made separately, and a bowl of the same form, to which a foot has never been attached, was found in one of the separate burials (no. 10, pl. III, fig. 4). The ware is of the usual kind, the base rounded and the lip spreading. It is 2·2 in. high and 3·9 in. across, with incised bands. The other bowl (pl. III, fig. 6) from this burial is of quite another shape, 2·9 in. high and 4·9 in. in diameter. Its black surface is highly burnished, and the lip and base are furnished with bead mouldings. With it was a vase of barrel form (no. 9), the ware being reddish brown (pl. III, fig. 8). It is 6·7 in. high and 5·3 in. in diameter, with slight cordons at the base of the neck, a rolled lip, and lines incised above the shoulder and round the body. A similar vase from the 'family-circle' at Aylesford is preserved in the Ashmolean Museum; and two others were included in the find at Hitchin, Herts.

The last vessel that could be restored is not known to have come from the vaults or other graves, and as it differs entirely in form and paste from the rest may perhaps belong to a Roman interment. It is, however, of rude manufacture, of grey colour and hard gritty texture, with an angular body and a flat lip flanged as if for the addition of a cover. It is 2·7 in. high, and has a diameter of 5·8 in.

The base, shoulder, and lip of a wide-mouthed urn have also survived, of the usual Late-Celtic ware. There is not enough to give the contour, but it probably resembled certain specimens from Aylesford that are quite distinct from the pedestal type, and must have been about $7\frac{1}{2}$ in. high. The diameter outside the lip is 6·6 in., inside 6 in., and base 4·2 in. There are two cordons on the shoulder, and traces of burnished black zones above the foot.

The association of the pottery vessels in the two separate burials at Welwyn is well established, and it is known that nos. 23–5 were found in a hole dug into the ground $2\frac{1}{2}$ ft. deep. In view of other discoveries of the kind there can be no hesitation in regarding them as interments after cremation, with accessory vessels, perhaps containing food or drink for the dead. Special interest attaches in these circumstances to the discovery at Hitchin, ten miles further north, in 1889.[1] Half a mile south of the Icknield way a circular cavity in the chalk rock was noticed 2 ft. 2 in. deep and 2 ft. 9 in. in diameter. The chalk sides were carefully smoothed and the floor levelled. In the earth that it contained were found at least eight 'cinerary urns' (though it is doubtful if all had contained burnt bones), including the pedestal and other types, one large urn being provided with a cover. The deposit seemed to have been previously disturbed, but calcined bones were noticed, chiefly in the surrounding earth. About four yards to the east was another cavity, but the pottery was not preserved by the workmen. Two other cavities were subsequently found in the same line, one containing no pottery, and the other with urns of a ruder type, a pair of iron shears, and a bronze brooch.

[1] *Proceedings*, xiii. 16.

Except that they were in a straight line and not in a ring, these Hitchin burials correspond closely to those at Aylesford, which Sir Arthur Evans calls a 'family-circle'. Quite recently eight pottery vessels including a pedestal urn 15 in. high and a barrel-shaped vessel about 8½ in. high have been found arranged in a straight line at Hamborough Hill, near Rayleigh, Essex. Though excavated without much attention to detail they doubtless represent one or more burials of the Aylesford period, as calcined bones were mingled with the surrounding soil.[1] The Elveden pottery,[2] found with the tankard, is also quoted in connexion with Aylesford, but the other vessels mentioned are casual finds, not known to have belonged to burials of this peculiar class; and only future discoveries can determine the limits of Belgic cremation in Britain. That the Belgae occupied Winchester and extended at least to Bath at one period is well known, but it does not follow that similar pottery or burial groups will be found so far west, as the Belgic frontier was probably further east in the pre-Roman days.

With regard to the identity of the individuals buried in such state eight miles from Verulamium, the earliest British capital known, it is tempting to speculate; and Sir Arthur Evans has suggested that they were of exalted, not to say princely, rank.[3] The relics date in his opinion 'from the last period of the uninscribed coinage of ancient Britain (before about 30 B.C.), and may well belong to the race, and possibly be associated with the immediate kin, of Cassivellaunus'. He adds a reminder that though Cunobelin (the Cymbeline of Shakespeare) transferred the capital to Colchester, his father Tasciovanus (or Tasciovans), and probably his grandfather Cassivellaunus, had their head-quarters at Verulamium, which later became the only municipium in Britain. In any case the Catuvellauni over whom they ruled were not less civilized than the Cantii, whose culture was specially remarked upon by no less an authority than Julius Caesar.

Sacrificial utensils dating from the period 500 B.C.—A.D. 500 have come down to us in some quantity, and the main types can be arranged in chronological order. The bronze jug or flagon underwent several modifications during those ten centuries, but was generally accompanied by a bowl of some sort in richly furnished graves or other deposits. In the Somme Bionne chariot-burial, Dépt. Marne, the late fifth-century type is found, with high shoulder, runnel spout, and acanthus design at the base of the handle. A Gaulish version of the classical pattern is the Waldalgesheim (Coblenz) flagon with cylindrical spout and debased acanthus friezes. In the third and second centuries B.C. the type with longer neck, bevelled lip and handle, like those found at Welwyn, was in fashion abroad, and no doubt lasted longer in this country, to be superseded by the jug with trefoil lip and mask-decorated handle. Such are common in Britain during the

[1] *Archaeologia*, lii. 354.
[2] *Essex Naturalist*, xvi. 253, figs. 3, 4.
[3] *Journ. Brit. Arch. Assoc.*, xlv. 81.
[4] *Times*, 28 Feb. 1911, p. 15.

Roman period, and are often associated with a somewhat heavy patella, the handle of which is reeded and terminates in a ram's head. For instance, in the hoard of scrap-metal found at Santon Downham, Suffolk (Cambridge Archaeological Museum), were the reeded handle of a patella ending in a dog's head, and the greater part of a jug with trefoil lip (*Proc. Camb. Antiq. Soc.*, xiii. 160, fig. 11; and 158, pl. xvii, figs. 2, 3).

An interesting illustration of this stage, from the second century of our era, is afforded by finds in the Bartlow Hills, Ashdon, Essex, on the Cambridgeshire border. In 1835 the largest of these barrows was excavated, and an illustrated account furnished to this Society.[1] In the form of a truncated cone, the mound was 45 ft. high and 144 ft. in diameter, the interment being at the centre in a wooden chest 4 ft. 2 in. by 3 ft. 8 in., 2 ft. deep and 4 in. thick; a globular amphora 22 in. both in height and diameter leant against the outside and contained earth, ashes, and small fragments of bone. Within the chest had been arranged a square glass jug as cinerary, a bronze jug 8 in. to the lip lying in a patella with ram's-head handle, an enamelled bronze bowl (now in the British Museum), a bronze lamp and jug of conical shape, a pair of strigils, glass and pottery vessels of small size, and a folding stool of iron[2] with bronze mounts and remains of its leather seat. As the strigils and a cup were associated with this camp-stool, it may have been intended for use in the bath, though possibly it betokened the office or rank of the deceased, who must have been a person of importance. An approximate date is given by the discovery of a coin of Hadrian (117–138) in a cinerary urn below one of the adjoining mounds (no. II), associated with similar grave furniture.[3]

To emphasize the persistence of ritual it may be mentioned that amphorae have been found at Heybridge, near Maldon, Essex, with a patella, of which the reeded handle survives but the ram's-head terminal is missing, and a bronze jug (oenochoè) with trefoil lip.[4] This group is evidently later than Welwyn, but seems to reflect the same feelings with regard to the dead, and the same ceremonial observances under Roman rules as in the days of independence.

The custom of using these two vessels together and depositing them in graves survived the Roman period, as is shown by the occurrence of degenerate forms in a Frankish interment at Eichloch, Wörrstadt, Rhenish Hesse,[5] both vessels showing a remarkable similarity to the corresponding Welwyn and

[1] *Archaeologia*, xxvi. 300, pls. xxxi–xxxv; cf. vol. xxv, pl. i.

[2] This may have served the same purpose as the iron frame at Welwyn; and another example is published from an early Frankish grave: Moreau, *Album Caranda*, nouv. sér., 7.

[3] *Archaeologia*, xxv. 7.

[4] Colchester Museum. These pans and jugs have also been found together at Canterbury (*Proceedings*, xviii. 279), Bartlow (*Archaeologia*, xxv, pl. ii, fig. 11), and Santon Downham (*supra*).

[5] Mainz Museum Report, 1895–6, pl. viii, figs. 5, 6.

Aylesford specimens. In Anglo-Saxon graves a few degenerate forms have come to light, as the frying-pan patella from Desborough, Northants, and perhaps the ewer from Wheathampstead,[1] which belongs to a type best represented on the middle Rhine. It is also possible to see in the well-known cast bronze bowls with drop-handles from Kent the descendants of the type found in the Thames near Weybridge,[2] and approximately dated by another from a grave at Glesch, Bergheim, about 12 miles west of Cologne.[3] There are two examples in the Guildhall Museum from the City of London dated by associated pottery to the first century of our era; and the type seems to have replaced the Welwyn type with drop handle (or handles) and elaborate base. Different manufacturing centres may have produced different forms in the same period to serve the same purpose, but there is evidence of a considerable interval between the bowls with drop-handles and those with a pair fixed to the rim, whether the latter were derived from the former or not. The point is that the Welwyn finds must be dated on circumstantial evidence: some features, such as the frying-pan patella, point to 100 B.C., while the occurrence of fire-dogs, slightly more conventional it is true, at Stanfordbury, with Roman glasses suggests a short interval between the two series. The trefoil-lipped jug, the patella with ram's-head terminal, and the deep skillet with flat handle rounded at the end are all later at least by one stage than the Welwyn bronzes, yet the same type of amphora occurred in quantity on both sites, and this kind of amphora is characteristic of the period, being seen as an accessory symbol on certain Gaulish coins.[4]

The discoveries at Aylesford have established a connexion with Italy in the first century B.C., and in this respect the Welwyn series does little more than confirm conclusions already drawn; but the comparative abundance of Italian bronzes in Britain suggests the question whether the Aylesford and Welwyn finds are indeed the earliest of their kind. Since the discovery of the cordoned bronze bucket at Weybridge[5] all things are possible; and not only must the alleged discoveries of early Italian bronzes be treated with less disdain, but the claims of at least two bronze jugs are practically vindicated. One is said to have been found in Bath,[6] and 'unquestionably belongs to a period considerably earlier than the Roman Empire or the Roman occupation of Britain'. The other was found at Tewkesbury, and is now in the British Museum. Both may be as early as the third century B.C.

It is worthy of remark that no brooches or weapons have been preserved or even mentioned from the Welwyn site. The Aylesford burials were similarly

[1] Both in British Museum: *V.C.H. Northants*, i. 238; *Herts.*, i. 253; and *Proceedings*, xviii. 110.
[2] *Proceedings*, xxii. 414.
[3] Willers, *op. cit.*, 56.
[4] Hucher, *L'Art Gaulois*, pl. 59, 87.
[5] *Proceedings*, xxi. 464; *Surrey Arch. Collns.*, xxi. 165.
[6] *Proceedings*, xx 266.

destitute of weapons, and at least one of the brooches was imported from Italy,[1] while the other was not of La Tène type. It is true that a late La Tène example was found with a bowl of this period at Kelvedon, Essex (p. 25), but it seems clear that brooches were not normally buried with pedestal urns. A striking contrast is afforded by discoveries in Wiltshire. Of the thirty or more brooches of La Tène I type found in Britain, thirteen or nearly half the total come from Wiltshire, where pedestal urns seem to be entirely wanting.[2] Examples are preserved from the Thames at Hammersmith, also from Surrey and Kent, but Essex, Middlesex, Herts., Bucks., and Beds. are not included in the list, and these five counties are probably all in the pedestal cremation-urn area. Further discoveries may reveal the graves of some who wore the La Tène brooch of the fourth or third century B.C.; but at present it seems that the brooch-wearers at that period were buried unburnt, like the group at Birdlip, Glouc., three or four centuries later.[3] Such indications should presently render possible the delimitation of the Belgic area with its pedestal cinerary urns, and enable us to trace with more certainty the limits of invasions for which there is independent evidence.

[1] *Archaeologia*, lii. 382; cf. Montelius, *La civilisation primitive en Italie*, ii, pl. 250, fig. 16.

[2] Rev. E. H. Goddard in *Wilts. Archaeological Magazine*, xxxv. 392; the thirteen brooches are also illustrated (figs. 3–15). List also in Bulleid and Gray, *The Glastonbury Lake-village*, i. 185. Forms allied to the pedestal urn have been noticed at Casterley Camp, Wilts. (*Cat. Devizes Museum*, 108, no. E 41 e), and recently at Hengistbury Head, Hants.

[3] *Archaeologia*, lxi. 341.

II. *Jousting Cheques of the Sixteenth Century.* *By* CHARLES FFOULKES, *Esq., B.Litt.*

Read 8th February, 1912.

In considering the regulations which governed the scoring of the different points in joust or tourney we have certain materials preserved to us which are at once interesting and useful but at the same time confusing in the extreme. These materials consist of written or printed rules and regulations, either of a general nature or framed for some particular contest, sample 'cheques' or score sheets, and also actual scores of the points made at certain jousts.

At first sight this material would appear to be sufficient and complete; but, on comparing the three sources of information, we find that no one of the three tallies with either of the other two conclusively.

The actual keeping of the score is but rarely mentioned in contemporary accounts, and only three writers refer definitely to the duties of heralds or kings of arms as scorers at the joust.

The first of these is found in *The Romance of Three Kings' Sons* (*circ.* 1500), Harl. MS. 326, fol. 113 v°.

> All these thinges donne thei were embatailed eche ageynste the othir and the corde drawen ageynste eche partie, and whan the tyme was, the cordes were cutte and the Trumpettis blew up for euery man to do his deuoir. And for to assertayne you more of the Tournay there was on eche side a stake, and at eache stake two Kynges of armes, with penne, and Inke, and paper, to write the names of all them that were yolden, for they shold no more Tournay.

The above refers to the tourney or *mêlée* of several combatants and not to the joust proper, which, whether on horse or foot, was confined to two individuals. In King René's *Traicte de la forme et Devis d'ung Tournoi* there is an illustration of a similar tourney in which the attendants are shown cutting the cords with axes, but there is no representation of officials keeping the score, nor does the treatise, which minutely regulates the tourney, mention this as one of the duties of the 'juges diseurs'. The second reference is of a more authentic nature, for it occurs in the account of the combat between Lord Scales and the Bastard of Burgundy on 12 June, 7 Edward IV (1466) given in Lansdowne MS. 285:

The Ordenaunce of kepyng of the Feelde

. . . at ev'y corner a Kyng of Armes crownyd and an Harauld or Pursevaunte within the seide feelde, for reporte makyng of actes doon within the same: Garter and othir Kynges of Armes and Haruldes to be sett in the scaffolde before the Kyng on the right hande the staire of the Kynges place judiciall' to make report generall' and to marke all' that should be doon in the seide feelde.

Though it is not actually stated that a written score was kept, the words 'mark all that should be done' suggest that either writing or possibly the notching of a stick was employed for recording the points at this contest.

In Hall's description of the Field of the Cloth of Gold we find a definite statement of fact, for he writes that 'the Judges were on stages to marke with ye king of Heraldes that was for Fraunce named Roy mon Joy, and for England kyng of armes Garter, to marke and wryte ye dedes of noblemen'.

The rules and regulations which governed the joust and the tourney were both elaborate and minute in detail, and were generally based upon the ordinances framed by John Tiptoft, Earl of Worcester, in 1466. These have been so frequently printed that they need not be repeated here. They are to be found in Harl. MSS. 2358 and 2413, Heralds' College M. 6, Ashmole MS. 763, *Antiquarian Repertory*, *Nugae Antiquae*, Meyrick's *Antient Armour*, and elsewhere.

In none of these versions is there any regulation as to the actual keeping of the score, but in the Harleian and Ashmolean MSS. sample cheques are given showing how each hit should be marked.

In the reign of Henry VIII there appears to have been some laxity in fixing the number of courses run, in spite of the fact that in the early years of his reign Henry was a strenuous devotee of the sport; for we find the Venetian Ambassador to France, Sebastiano Giustiniano, writing to the Doge and Senate of Venice (Feb. 17, 1531) that he has it on the authority of King Francis that in England 'when the King jousts it is customary for Madame the Queen to preside as judge of how many strokes the King may make, so when it seems to her fit she sends word that the Kings joust no more'.[1]

It is a notable fact that Henry was always the winner at these entertainments, and, although his strength and skill as a jouster are admitted, his invariable success may possibly have been due in some measure to this prerogative of the Queen, by which the contest could be stopped if there appeared to be a chance of failure.

The subject of the joust and the tourney has not, up to the present, been seriously considered by French writers, but in Germany this is far from being the

[1] In a 'Memorial' of the Field of the Cloth of Gold (*Cal. of Lett. and Pap. Hen. VIII*, iii. 807) we find 'the number of strokes with the sword (at barriers) to be at the pleasure of the ladies'.

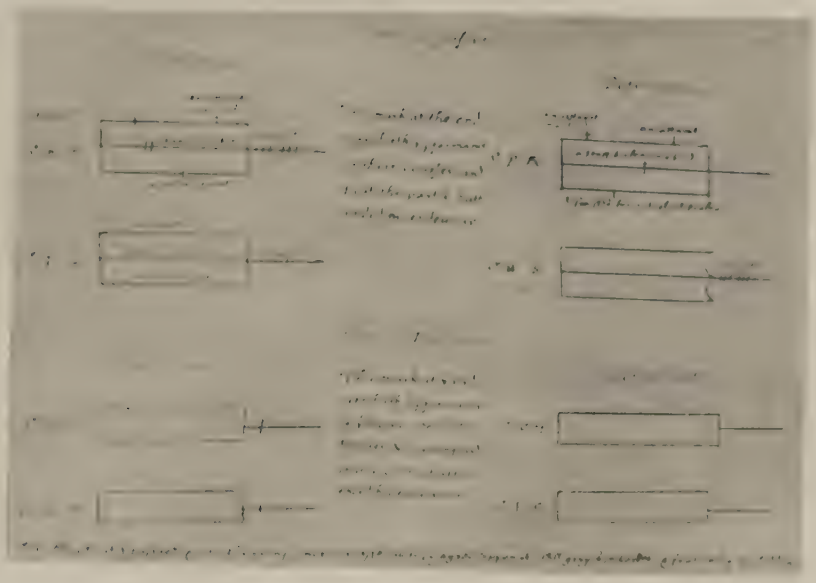


Fig. 1. Jousting cheque in the possession of Mr. A. Wood Acton

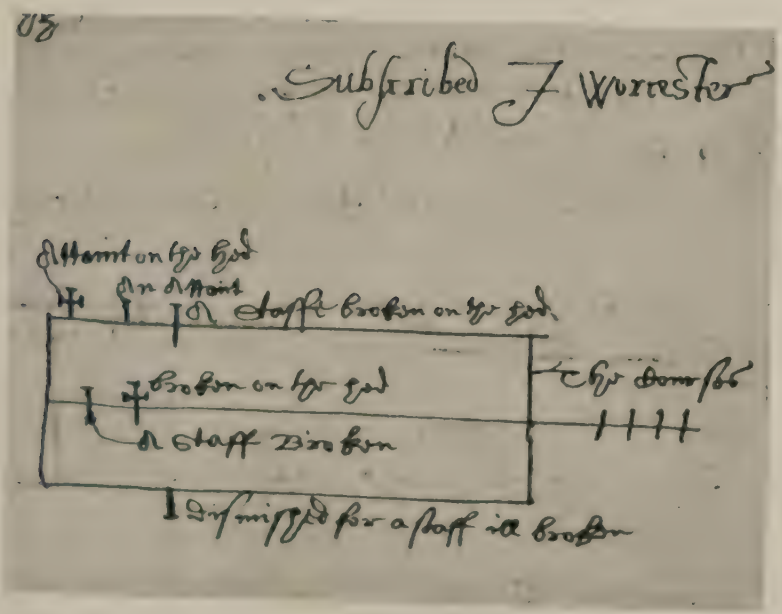


Fig. 2. Jousting cheque in the Bodleian Library. Ashmole MS. 763

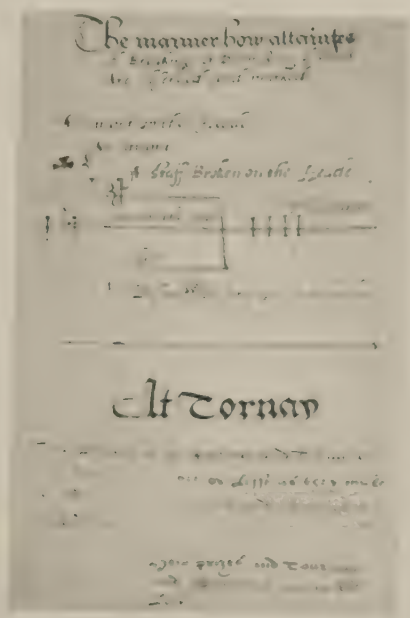


Fig. 3. Jousting cheque in the British Museum. Harl. 2413

case, for Gurlitt,[1] Niedner,[2] and Dr. Haenel[3] have produced works of the first value dealing with the German varieties of joust and the rules which governed them. In none of these works is there any mention of written scores, and, apparently, none of these scores are to be found in contemporary documents, so we may assume that the practice was confined to England.

Up to the present time ten of these jousting cheques have come to light: one is in the possession of the Society of Antiquaries, one in the Heralds' College, two are in the British Museum, five are in the Bodleian Library, and one is in the possession of Mr. A. Wood Acton. One of the Bodleian cheques is identical with one in the British Museum, so that the number of examples known is reduced to nine.

The two sample cheques given on plate IV, figs. 2 and 3, are to be found at the end of the Tiptoft Ordinances above referred to in Harl. MS. 2413, fol. 16, and also in Ashmole MS. 763, fol. 149.

A parallelogram of this form was used for each individual jouster, and his score was marked on one or other of the three lines. The marks on the centre line, outside the square, indicate the number of courses he ran against his particular opponent, and these vary from two to eight on different occasions.

The system of marking as shown on this sample cheque must have been considered too intricate for practical purposes, for it is never found on any of the cheques which record the scores of jousts. The crosses on the top and middle lines only appear on these sample cheques and were evidently too complex a marking for hurried scoring.

The only marks which are found in score-sheets which were used are those which touch or cross the three lines in the parallelogram. The marks which are found on the bottom line record a point or points subtracted for 'a staff ill broken', that is, broken on the tilt, on the horse, or on the back of the opponent.

The third of these cheques on plate IV is from a manuscript in the possession of Mr. A. Wood Acton, Acton Scott, Salop, which, according to Mr. Everard Green, Somerset Herald, was drawn up by Rouge Dragon in 1597. Here we have certain definite information, for in the second cheque we find that the marks on the top line are the attaints, and those on the middle line the staves broken. At the same time, however, the two lower cheques are confusing, for in one an attaint is marked as crossing the line and in the other as touching the line. On the top left-hand cheque the word 'Attaints' has been substituted for 'Attaint on the hed', which has been erased.

[1] *Deutsche Turniere, Rüstungen und Plättner*, 1889.
[2] *Das deutsche Turnier im XII. und XIII. Jahrhundert*, 1881.
[3] *Der sächsischen Kurfürsten Turnierbücher*, 1910.

If we accept the erased words as correct, we find that the value of the marks on this sample cheque is as follows. An attaint on the head is a mark crossing the top line, an attaint (on the body) a mark touching the top line. Spears broken on the body are lines crossing the centre line, and spears broken on the head a cross which crosses the centre line.

The cross on the top and centre lines is not found on any of the practical score-sheets.

There seems to have been no reason for the parallelogram in the score for the tourney, for the 'blow' or hit is recorded outside.

The first of the series of jousting cheques in existence is that which is found in the Heralds' College (M. 3), which records the scores made at the jousts held by Edward, Duke of Buckingham, in honour of the marriage of Prince Arthur with Katherine of Aragon[1] in November, 1501. Hall does not give any details of the occasion beyond the fact that the Duke of Buckingham was chief Challenger and Thomas Grey, Marquis of Dorset, chief Defender. These cheques have not been reproduced.

The second cheque, and the most important and interesting of all the series, refers to the jousts held on the 12th and 13th of February in the second year of Henry VIII (1510). This entertainment is chronicled by Hall and Holinshed, and is magnificently illustrated in the Roll preserved in the Heralds' College and engraved in vol. i of *Vetusta Monumenta*.[2] The coloured facsimile on plate VII has been reproduced by permission of the Chapter of the College of Heralds. The dates on these several records do not all tally, for the cheque is dated 12 and 13 Feb., 2 Hen. VIII. Hall gives the date as 12 Feb., 2 Hen. VIII, while the Roll in the Heralds' College is dated 1 Henry VIII. At the same time, all these records state that the jousts were held in honour of the birth of a prince, and as this occurred in the second year of the reign, the mistake on the Roll must be regarded as a slip of the pen.

Hall describes the jousts as follows:

> The morrow beyng the xiii daye of February after dynner, at tyme conuenient, the Quene with the ladyes repaired to see the Justes, the trompettes blew up, and in came many a Noble man and Gentelman, rychely appareiled, takynge up their horses, after whome folowed certayne lordes appareiled, thei and their horses in clothe of golde and russet tynsell: knyghtes in clothe of golde and russet Veluet. And a greate number of

[1] A tapestry representing the wedding is preserved in the state rooms of the President's Lodgings, Magdalen College, Oxford.

[2] One of the figures on the roll has been engraved in Dallaway's *Heraldic Enquiries*, and three figures, an initial letter, and a badge are reproduced in the *Catalogue of the Heraldic Exhibition*, Society of Antiquaries, 1896. Mr. Everard Green, F.S.A., Somerset Herald, has described the roll in detail in *Proceedings*, xv, p. 212.

Gentelmen on fote, in russet satyn and yealow, and yomen in russet Damaske and yealow, all the nether parte of euery mans hosen Skarlet and yealow cappes. Then came the kyng under a Pauilion of clothe of golde, and purpull Veluet embroudered, and powdered with H. and K. of fyne golde, the compas of the Pauilion aboue embrudered rychely, and valenced with flat golde, beten in wyre, with an Imperiall crowne in the top of fyne golde his bases and trapper of clothe of gold, fretted with Damaske gold, the trapper pedant to the tail. A crane[1] and chafron of stele in the front of the chafron was a goodly plume set full of musers or trembling spangels of golde. After followed his three aydes, euery of them under a Pauilion of Crymosyn damaske & purple poudred with H. and K. of fyne golde, valenced and frynged with golde of damaske: on the top of euery Pauilion a greate K. of golde smythes worke, the number of the Gentelmen and yomen attendant a fote, appareiled in russet and yealow was C.lxviii. Then next these Pauilions came twelue children of honor, sitting euery of them on a greate courser, rychely trapped and embroudered in seuerall deuises and facions, where lacked neither brouderie nor gold smythes worke, so that euery child and horse in deuice and facion was contrary to other, which was goodly to beholde.

Then on the counter part entered Sir Charles Brandon, firste on horse backe in a long robe of russet Satyn, lyke a recluse or a religious person and his horse trapped in thesame sewte without dromine or noyse of mynstrelsye, puttynge a byl of peticion to the Quene, the effect whereof was, that if it would please her to licence hym to runne in her presence, he would do it gladly, and if not, then he would departe as he came. After that his request was graunted, thenn he put of hys sayed habyte and was armed at all peces, with ryche bases & horse, also rychely trapped, and so did runne his horse to the tylte ende where diuers men on fote appareiled in russet satyn awaited on hym: next after came in alone young Henry Guylford Esquir hym selfe and his horse in russet clothe of golde and clothe of syluer, closed in a deuice, or a pageant made lyke a Castell or a Turret wrought of Russet cercenet florence wrought and set out in golde with hys worde or posye and all his men in Russet satyn and white, with hosen to thesame, and their bonettes of lyke colours, demaunding also licence of the Quene to runne, whice to hym graunted toke place at the ende of the tylte.

Then came next the Marques Dorset and syr Thomas Bulleyn lyke two pilgrims from Saint James in taberdes of blacke Veluet with palmers hattes on their helmettes wyth long Jacobs staues in their handes, their horses trappers of blacke Veluet their taberdes, hattes and trappers set with scaloppe schelles of fine golde, and strippes of blacke Veluet, euery strip set with a scalop schell their seruantes al in blacke Satyn with scalop shelles of golde in their breastes. Sone after came in the lorde Henry of Buckingham Erle of Wyltshire hym selfe and his horse appareiled in clothe of syluer embroudered with a posye, or his worde, and arrowes of golde in a posye, called La maison du refuge made of Crymosyn damaske, broudered with Roses and arrowes of golde, on the tope a greyhonde of syluer, bearynge a tree of Pomegarnettes of golde the braunches therof were so large that it ouerspredde the pageant in all partes. Then entered Syr Gyles Capel, Syr Rouland with many other knyghtes, rychely armed and appareiled. And thus beganne the

[1] Crinet or neck defence for the horse.

Justes, whiche was valiantly acheued by the kyng and his aides, among whome his grace atteyned the pryce.

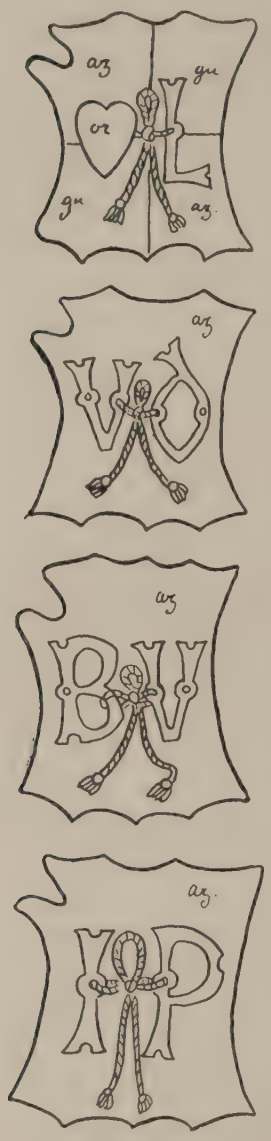


Fig. 1. Detail of Shields, plate V.

In describing the preliminaries of the jousts, Hall mentions that the names of the Challengers or Tenans, Cure Loial, the King; Bon Espoir (Bon Vouloir on the other records), Lord William Devon;[1] Valiant Desire, Sir Thomas Knivet;[2] and Joyeulx Penser, Edward Nevell,[3] were 'set on a goodly table and the table hanged upon a tree curiously wrought and that they were called *Les quater Chiualers de la forrest saluigne*, these foure to runne at the tilte against all commers, with other certayn Articles comprised in the said table'.

This table (plate V) is a parchment measuring 21 in. by $13\frac{1}{2}$ in. (Cart. Harl. Antiq. 83, H. 1), on which are inscribed the Articles of the Joust, which also appear at the end of the Roll in the Heralds' College. The border of roses and pomegranates is coarsely painted in natural colours. The shields bearing the devices of the four Challengers are azure, with the exception of that of Cœur Loyal, which is azure and gules quarterly. The device on this shield is a golden heart joined by cord and tassel to an L, and the other three shields bear respectively V.D., B.V., and I.P., also in gold and joined with golden cords. The document bears the signature of Henry on behalf of the Challengers and those of the Answerers.[4]

1st day. Lord Richard Grey,[5] Thomas Cheyney, Sir William a' Par,[6] Robert Morton, Richard Blount,[7] Thomas Tyrell, Sir Rowland and Christopher Willoughby, and for the second day.

2nd day. Thomas Howard,[8] Henry Stafford Earl of Wiltshire,[9] The Lord Marquis,[10] Lord John Grey,[11] Sir

[1] William, son of Edward Courtenay, bearer of sword at coronation of Henry VIII, created Earl of Devonshire 1511, uncle by marriage of Henry.

[2] Master of Horse 1509, captain of the *Regent*, which was blown up with all on board 1512, knighted 1509.

[3] Knighted at Tournay 1513, standard-bearer 1531, beheaded 1538.

[4] Vide Ellis, *Orig. Lett. on Eng. Hist.*, 2nd series, vol. i.

[5] ? brother of Lord Dorset.

[6] Sheriff of Northamptonshire.

[7] ? son of fourth Baron Montjoy, and brother of Elizabeth, mistress of Henry VIII.

[8] Earl of Surrey 1489, Duke of Norfolk 1514.

[9] Created Earl 1510, brother of Edward, Duke of Buckingham.

[10] Thomas Grey, Marquis of Dorset, Lieutenant-General of the Army, 1512.

[11] ? brother of the above.

ARTICLES OF THE JOUSTS OF 12, 13 FEB. 2 HENRY VIII (1510)
B. M. Cart. Harl. Antiq. 84 H. 3.

Thomas Boleyn,[1] Sir Henry Guilford,[2] John Melton, Gryffyth Doon, Charles Brandon,[3] Edmond Haward,[4] Leonard Grey,[5] Richard Tempest, Thomas Lucy.[6]

The following is a transcript of the manuscript in the Bodleian Library, which appears to be an official record and score of the jousts (plate VI):

Bod. Lib. Oxon. Ashmole MS. 1116, foll. 109–110 b.[7]

Justes houlden at Westminster the xijth daie of ffebruary by the kinges grace Cueur Loyal the Lord William of Deuon bon Voloir Sir Thomas Knivet Valiant desire and Edward Nevell Joyous Penser, with the articles and courses of the said iustes &c.

The Noble Lady Renowne considering the good and gracious fortune y^t^ it hath pleased god to send vnto her right dere and bestbeloved cosins the king and queene of England and of ffrance y^t^ is to saie the birth of a yong prince hath sent iiij knightes borne in her realme of Cueur noble That is to saie Cueur Loyall, bon Voloir, valiant Desire and ioyous Penser to furnishe and accomplishe certain articles as followethe.

And for as muche as after order and the honour of Arms hit is not lawfull for any man to enterprise Arms in so highe a presence with owt his stock and name be of noble descended In consideracion whereof theis iiij knightes be of strange parties and yf so feur they shall present them selfes with their names and armes portratured in their sheildes.

Item theis iiij^or^ knightes shall present them selfes in the feild at the pallais of Richmond or ells where it shall please the kinges grace at the tyme of Candellmas next or nighe thereuppon in harnoys for the tilt without tache[8] or breket[9] volant pece

[1] Father of Anne, arranged the preliminaries of the Field of the Cloth of Gold, created Earl of Wiltshire and Ormonde 1529.

[2] Master of Horse and Controller of the Household, knighted 1512, standard-bearer 1513.

[3] Created Duke of Suffolk 1514.

[4] Son of Sir Thos. Howard, first Earl of Surrey, Marshal of Horse and standard-bearer at Flodden. He was entirely ruined by the expense incurred at the Field of the Cloth of Gold and was granted a 'diet for taking thieves' at 20*s.* a day.

[5] Lord Leonard Grey, brother of Dorset, marshal and deputy of the English army in Ireland, created Viscount Crane 1531, beheaded 1541.

[6] Sewer to Henry VIII, knighted 1512.

[7] In many respects this is identical with the matter found on the Roll published in *Vetusta Monumenta*, vol. i, but the poem on the latter is not given in this MS.

[8] *N.E.D.* gives 'an iron plate, a fastening'. The latter is the more probable. Cf. 1500, *Melusine*: 'And there Regnald . . . smote the kynge Zelodyus upon the helmet . . . and therewith brake the taches of his helmet.' In the MS. before us the word may refer to the expedient of tying the jouster to the saddle. In Cot. Julius, E. iv. 31, Richard Beauchamp, Earl of Warwick, was accused of being bound to the saddle at a joust, and alighted to prove the falseness of the charge. See also note 2 on p. 36.

[9] Douce *Archaeologia*, xvii, 292) gives 'breastplate, Fr. *brasset*'. If taken in conjunction with the volant-piece it would be some additional plate defence. It is mentioned in the Hastings MS. *Archaeologia*, lvii, 421, but here it seems to be connected with the gauntlet or brassard. In the *Treatise of Warlike Armes* by Johan Hill, 1434 (Ashmole MS. 856, fol. 376–383), which is given in full in *The Armourer and his Craft*, Charles Hoolkes, we have the same arm defences ordered under the same conditions, but they

on the hed[1] Rondell in the gard Rest of advantaige[2] fraud or desiet or any other mal engyn.

Item to euerie commer shall be runne six courses provided alwaie yf y^e^ commers be of so great nombre that they cannot reasonably be aunswered for one daie it shall be lawfull for the iiij^or^ chalengers to enter the feild y^e^ second daie and so to aunswere all the commers till the full nombre be served of suche as be noble of name or of Arms and without reproche.

Item all speres to be garnished and brought to the feild at the provision and charges of the chalengers of the which speres the aunswerers must haue the choise.

Item yf it happen to any man as god defend to kill his fellowes horsse by waie of foule running he shalbe bound y^t^ so dothe to giue the horsse y^t^ he rideth on to his fellow or the price of the horsse so killed at the discrecion of the iudges.

Item to obserue the manner how the prizes shalbe given and for what consideracions the speres broken shalbe allowed or disallowed as is aforesaid.

[This paragraph takes the place of the conditions as to breaking lances, &c., which are given on the Challenge (plate V) and also on the Roll.]

Item it is the pleasure of the king our most dread Soveraigne Lord the Queenes grace and the Ladies with the aduice of the noble and discreet iudges to giue prizes after their deseruing unto bothe the parties.

Item y^t^ euerie gentilman aunswerer do subscrib his name to theis articles.

Item it is the humble request of theis iiij^or^ gentilmen that yf in their articles be comprized more or lesse then honour or courtesie requirethe euer to submit them selfes

are described as 'shitten with forelocks'. We may therefore suppose that the breket was a turning hook or linch-pin (Fr. *brochette*).

[1] Either a spring breastplate used in the German *Geschiftscheibrennen*, or more probably a reinforcing piece worn on the breast or lower part of the helm.

[2] These must refer to the lance and its appointments. In the Lansdowne MS. 285 above referred to the rests or *arrestz advantageuz* are mentioned in the challenge of Loys de Brutalle which was issued after the fight between Lord Scales and the Bastard of Burgundy. Here it is stated that the course was to be 'without toille'. The lance rest with the queue could not be used conveniently over the toile or barrier, but was employed when the riders rode right arm to right arm. At the same time, in the challenge of Phillip de Bouton, in the Lansdowne MS. 285, although the courses are to be 'a la toille', the following passage occurs: 'Et se les arrestz dezd' lances estoient rompuz ou desclouez, on les po'ra resserrer a just mes^e^ et saunz male engyn.' The article goes on to state, 'et se pourra fournir de rondelles mond' compaignon a son choys et plaisir de couronelles aussi.' It should be noticed in the illustration on pl. VII that Henry VIII has no rondel or vamplate on his lance and there are no lance-rests shown on the armour of any of the jousters. In Jehan de Lescaille's Ordonnances of the Jousts at the Field of the Cloth of Gold we find the fifth condition states definitely that 'pieces d'avantage' means with no headpiece but an armet, neither helm, demi-helm, or bascinet allowed. The combatants are also ordered to joust either with 'pieces d'avantage cramponées ou non cramponées' and without fastening to the saddle. The 'crampon' was a staple by which the reinforcing piece was fastened to the armour underneath. In the 'memorial' referred to on p. 32 the words 'pieces of advantage' have been crossed out and 'tonnelets and bacinet' substituted, apparently to leave no doubt as to what these 'pieces' were.

Item it is the pleasure of the kinge our most dreade Soverayne Lord the Quenes grace and the Ladies with the Duke of the noble and discreet iudges to giue prises after their deseruing vnto both the knights

Item euery gentleman aunsweringe to subscribe his name to their articles

Item it is the humble requeste of your said iiij gentlemen that all & singuler their articles be comprised more or lesse from kinge or courtesie requested euer to submitt them selfe to the queene and the Ladies and thy alwaies to dwell and dimmysse at their noble pleasures.

Jouste token at westminster the viijth daie of ffebruarie in the second yeare of the raigne of kinge Henry the viijth by Cueur Loyall Bon vouloir Valiant desire & Joyeuse Penser

Chalenged.	Wenseaue the first time	Defended
Cueur Loyall		The Lord la Graye
Cueur Loyall		Sr William Sparre
Cueur Loyal		Robt Morton
Cueur Loyal		Rygard Blount
Bon Vouloir		Thomas Eppyng
Joyeuse Penser		Thomas Tuell
Valiant Desire		Sr Rowland
Bon Vouloir Valiant Desire		Roger Wilbraham

JOUSTING CHEQUE IN THE BODLEIAN LIBRARY (ASHMOLE 1116), DATED 12 FEBRUARY 1510

Published by the Society of Antiquaries of London, 1912

to the queene and the Ladies and they alwaies to add and diminishe at their noble pleasures.

Wensdaie the first daie

Joustes holden at westminster the xijth daie of ffebruarie in the second yeare of the raigne of king Henrie ye viijth by Cueur Loyall Bonvoulloir Valiant desire and Joyeulx Penser.

Here follows the jousting cheque reproduced on plate VI, in which the Defenders are those given on the Challenge.

ffor this daie for the party within Joyeulx Penser and bon Voulloir iousted well and Cueur Loyal iousted better the right high mightie and excellent princesse the noble Queene of England and of ffrance by the advice of her Ladies gentellweomen and iudges hath awarded the prize for the partie within to valliant Desire Sir Thomas Knevit for the first daie and for aunswerer as the best iouster that daie to Richard Blount.

Thursdaie the second daie

Here follows another jousting cheque in which the Challengers are the same as on the previous day and the Defenders are those mentioned on the Challenge. At the end of this score is a supplementary cheque: 'For the Kinges Ladies sake,' in which Cueur Loyal jousts twice with the Lord Haward and twice with Charles Brandon.

And for this daie for the partie within Joyeulx Penser and Valiant desire did well and bon Voulloir did better but aboue all Cueur Loyal did passe wherefore the right highe righte mightie and excellent Princesse &c. did award the Prize to Cueur Loyal and for the deffenders to Edmond Haward.

And it is to be noted y^t euery prize was worthe ij^l crownes geven by the Queene.

The following list shows the nature of the points made by each of the combatants:

Scores shown on Jousting Cheque of xii Feb. 2 Hen. VIII.

Bod. Lib., Ashmole MS. 1116.

FIRST DAY.

Challengers and Defenders.	(*a*) Attaints (on the head?).	(*b*) Attaints.	(*c*) Spears broken.	(*d*) (?)	(*e*) Rebatements.	*Courses run.*
Cueur Loyal	...	...	1	3	...	6
v.						
Lord Rich. Greye	...	...	2	...	...	6
Cueur Loyal	...	1	3	1	...	6
v.						
Sir W. Aparre	...	1	2	...	...	6
Cueur Loyal	...	1	2	...	...	6
v.						
Robt. Morton	...	1	1	...	...	6
Cueur Loyal	...	...	1	3	...	6
v.						
Rich. Blount	...	...	3	...	...	6
Bon Vouloir	1	1	...	1	...	6
v.						
Thomas Chesney	...	1	1	1	...	6
Joyeulx Penser	...	...	1	...	...	6
v.						
Thomas Tirell	...	...	...	1	...	6
Valiant Desire	...	...	2	2	...	6
v.						
Sir Rowland	...	1	1	1	...	6
Bon Vouloir	...	...	...	2	...	3
Valiant Desire	...	...	...	1	...	5
v.						
Chris. Willoughbie	...	...	...	...	...	8

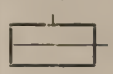
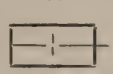
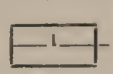
PORTION OF THE ROLL IN THE HERALDS' COLLEGE

This Roll (59 ft. × 14¾ in.) illustrates the Jousts held at Westminster 12 and 13 February, 2 Henry VIII. Besides the actual jousting the Roll shows the 'Articles of the Jousts', the Processions to and from the lists, the Challengers and Defenders. The entire Roll has been engraved in *Vetusta Monumenta*, vol. i.

Published by the Society of Antiquaries of London, 1912

SECOND DAY.

Challengers and Defenders.	(a) Attaints (on the head?)	(b) Attaints.	(c) Spears broken.	(d) (?)	(e) Rebatements.	*Courses run.*
Cueur Loyal	...	...	1	4	...	6
v. Lord Haward	...	...	...	2	...	6
Cueur Loyal	...	1	3	1	...	6
v. Charles Brandon	...	...	...	3	...	6
Valiant Desire	...	...	2	1	...	6
v. The Lord Marques	...	...	1	3	...	6
Bon Vouloir } Joyeulx Penser }	...	...	2	1	...	6
v. Henry Guildford	...	...	...	1	...	6
Joyeulx Penser } Bon Vouloir }	1	...	1	1	...	6
v. Earle of Wiltsheire	...	...	1	...	...	6
Valiant Desire	...	...	1	1	...	6
v. Sir Thos. Bulleyn	...	...	...	1	...	6
Bon Vouloir	...	1	2	1	...	6
v. Thomas Lucy	...	...	...	1	...	6
Joyeulx Penser	...	...	1	...	...	6
v. Lord Leonard	...	...	1	1	...	6
Valiant Desire	...	...	3	1	...	6
v. Lord John (Grey)	1	...	2	1	1	6
Bon Vouloir	...	...	2	2	...	6
v John Merton	...	...	2	1	...	6
Joyeulx Penser	...	...	3	2	...	6
v. Griffith Doon	1	...	1	1	...	6

Challengers and Defenders	(*a*) Attaints on the head?	(*b*)  Attaints.	(*c*)  Spears broken.	(*d*)  ?	(*e*) Rebatements.	*Courses run.*
Cueur Loyal	...	...	3	2	...	6
v.						
Edmond Haward	...	...	4	...	...	6
Cueur Loyal	...	...	2	1*	...	6
v.						
Rich. Tempest	...	...	2	...	1	6

FOR THE KINGE'S LADIES SAKE.

Cueur Loyal	...	...	2	...	...	2
v.						
Lord Haward	...	...	1	...	...	2
Cueur Loyal	...	...	1	1	...	2
v.						
Charles Brandon	...	...	2	...	...	2

On comparison with the sample cheque (plate IV) we may assume that all the marks on the centre line are spears broken and those on the top lines are attaints. As has been noticed above, the marks which only touch the centre line are not shown in any of the sample cheques, so we are unable to fix their value. Of the points scored under (*a*) only 4 are found, and this can be understood when we remember that the helm presented but a small area to the aim of the jouster. Of those marked (*b*) there are 9, and these presumably are attaints on the body. For the expert jouster the breaking of the soft-wood lance on the body was, apparently, a more common performance than the mere attaint, for on (*c*) we find that 59 points of this nature were scored. Of the points of unknown nature at (*d*) 48 were scored. These may be spears broken on the head, but this is extremely unlikely, for the breaking of a spear on the head was a most difficult feat and, according to the Tiptoft Ordinances, was worth double as compared with the breaking of a spear on the body. On the first day the King scored 16 points: 2 under (*b*), 7 each under (*c*) and (*d*); on the second day he scored 22: 1 under (*b*), 12 under (*c*), and 9 under (*d*).

According to the Tiptoft Ordinances, an attaint (*b*) on the body did not count, an attaint on the head (*a*) counted $\frac{1}{3}$ or 3 attaints counted 1, a spear broken on the body (*c*) counted 1, and a spear broken on the head (*d*?) counted 2.

The Conditions of the Joust which are given on the Challenge (plate V)

and also on the Roll are not given in the Bodleian MS., probably because this was a working document used by an official who knew them by heart. They are as follows:

Item who striketh his fellow beneth the waist or in the sadel with full course by way of fowle Ronnynge he shall be dissallowed for ii speres before broken

Item who stryketh his fellow uncharged and disgarnyshed his speare he shall be disallowed at the discression of the Judges

Item who breaketh his spere above the charnell[1] to be allowed ii speres well broken after the old custom of armes

Item who breaketh his spere morne to morne to be allowed iii speres after the custome of armes

Item who breaketh most speres ys better worthey of the pryse

Item who stryketh down horse and man is better worthe the pryse

Item who stryketh his fellow clere out of the sadell is best worthe the pryse

If any gentleman chalenger or defender breake a Staff on the tylt to be disallowed a staff

From the sample cheques we have no knowledge of the marks used to record each of these items.

The jousts were held in the Tilt Yard, which was on the site of the present Horse Guards. The locality is still called The Tilt Guard on modern Ordnance maps. It is shown on Agas's map of 1590 and on Faithorne's map of 1658.

Both before and after the jousts on this occasion pageants were held, of which the bills of expenses are preserved in the Record Office. The items include paper for moulding beasts, canvas—with 4 lb. iron wire for the tails—to make the lion and the 'olyvant', 2 dozen 'embossed birds', and 2,400 acorns and hazel nuts for the trees at 8*d.* the hundred.

Edmond Skill was paid 42*s.* 10*d.* for 'making the apparel of the maiden in the forrest', and of the lion and the olyvant (this last word has been erased and 'antelope' substituted) and for the 'woodwos' (wildmen).

To the broiderer for embossing 40 winged faces on the sub-dean's blue damask garment was paid 46*s.* 8*d.*

The hire of 'the Bishop of Hereford's place for 31 days' cost 4*d.* per day, and the mending of the floor broken by the weight of the pageant (a set scene on wheels) cost 1*s.* 4*d.*

Hall describes these revels and mentions the crush of the general public for largesse. This caused the destruction of the King's pavilion and much damage to the costumes of the court. Henry and Sir Thos. Knivet lost the

[1] The belt that fastened the helm to the cuirass. Cf. Treatise of Johan Hill, armourer. Bod. Lib. Ash. MS. 856, p. 377: 'The basenet . . . locked or charnelled also to ye brest & behynd wt. two lenocks.'

golden H's and K's which decorated their costumes to the value of 225 oz. of gold. Hall writes that a shipman of London caught certain letters, which he sold to a goldsmith for £4 13*s.* 8*d.*, and observes that from this one might judge of the great value of the dresses. Besides the four knights challengers who took part in the jousts, two others called Bone foy and Amoure loyall took part with them in the pageant.

The cheque shown on plate VIII, fig. 1, is found in Harl. MS. 69, fol. 16 b. The heading gives the date of 20th May, in the 8th year of Henry VIII (1516).

Fig. 2. The Tilt Yard, Westminster, in 1590: from Agas's Map.

Hall describes these jousts as being held in honour of the visit of Margaret Tudor, Queen of Scots, sister to Henry VIII, and her husband Archibald, sixth Earl of Douglas, whom she married after the death of James IV at Flodden.

The kyng for the honoure of hys syster, the xix and xx day of Maye prepared ii solemyne daies of Justes, and the kyng hym selfe & the duke of Suffolke, the erle of Essex, & Nicholas Carew esquyer, toke on them to aunswere al commers. The apparel of them & their horses was blacke veluet, couered al ouer with braunchez of hony suckels of fine flat gold of dammaske, of lose worke, euery lefe of the braunche mouing, the embroudery was very connynge and sumpteous. On the kyng was attending in one suyte on horsback, the lorde Marques dorset, the erle of Surrey, the lord Burgainy, the lord

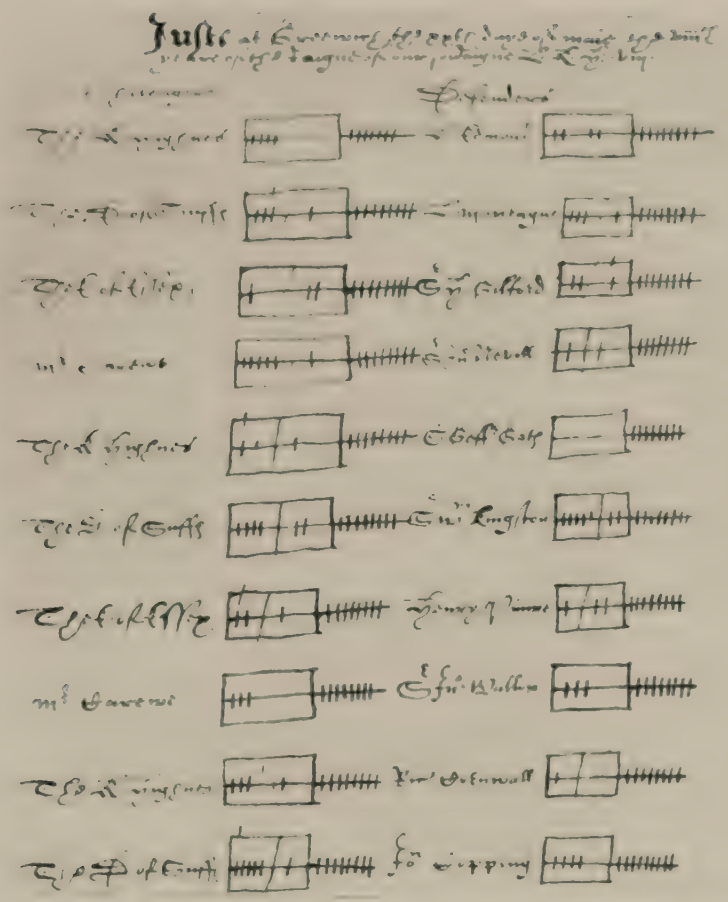


Fig. 1. Jousting cheque in the British Museum (Harl. 69), dated 20 May 1516

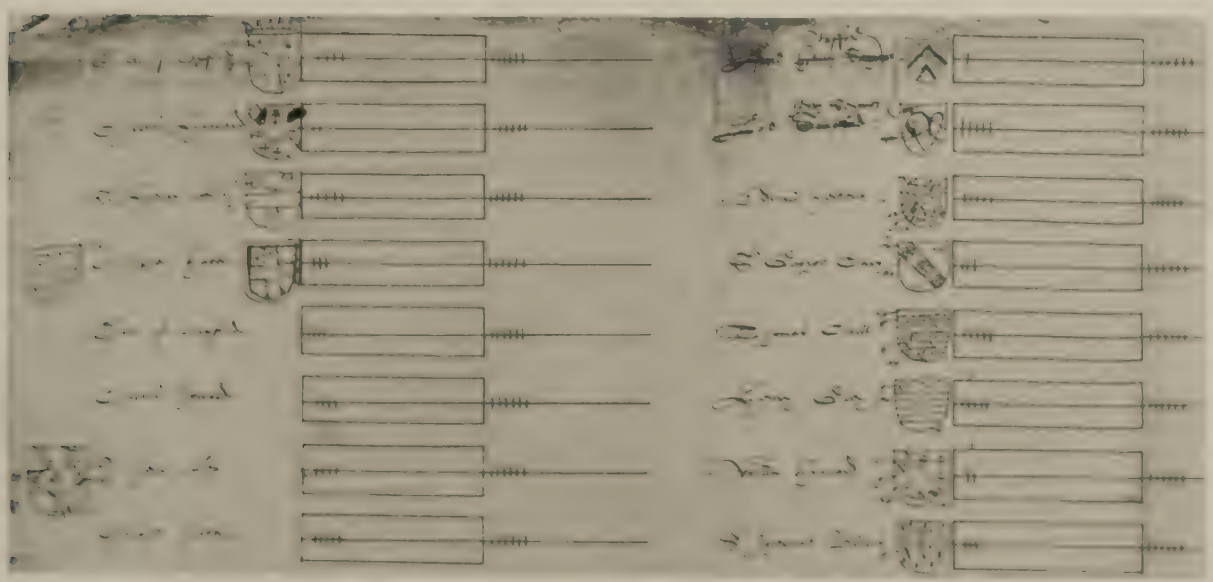


Fig. 2. Jousting cheque in the Bodleian Library (Ashmole 845), dated May [illegible]

Hastinges, sir Iohn pechy, the lord Ferreys, sir William Fitzwilliam & xii other knyghtes, all these were in frockes of blewe velvet, garded with ryche clothe of golde, and their horse trappers of blew velvet, frynged with golde: And on foote were xi persons all in blew satyn, garded with clothe of golde. And so they entered the fielde with trompettes, dronslades and other mynstrelsy.

Then came in the counterpart, rychley apparelled, to the number of xii and on that daye euery man did well, but the kyng did best, and so was adiudged, and so at night they ceassed, and came to supper.

Fig. 3. The Tilt Yard, Westminster, in 1658: from Faithorne's Map.

The following day the King's party were dressed in purple embroidered with rose leaves of gold, while his attendants, eighty-three in number, were dressed in yellow velvet and satin edged with gold.

Hall writes that 'This day was many a great stripe geve', and mentions Sir William Kingston as being a tall strong knight whom Henry overthrew. After the jousts there appears to have been a tourney, for Hall says that 'they came volant at al comers whiche was a pleasant sight to se'.

Thos. Allen, writing about these jousts to the Earl of Shrewsbury (Lodge, *Illustrations of British History*, i. 171, says: 'As I her say, the Kyng hathe promysed never to just agayn except hit be with as gud a man as hymselfe.'

The names given on the cheque are: Challengers—The King's Highness, the Duke of Suffolk,[1] the Earl of Essex,[2] and Mr. Carew.[3] Defenders—Lord Edmond Haward, Lord Montagu,[4] Henry Guildford,[5] Sir John Nevill,[6] Sir Geoffrey Gates, Sir William Kingston,[7] Henry Pimpe, Sir John Wallop,[8] Richard Cornwall,[9] and John Copping. This cheque differs from the others in that many of the parallelograms are divided into two parts, a method of marking of which there is no record given in any of the sample cheques. The accounts of expenditure for these jousts are preserved in the Record Office. There are entries of $260\frac{3}{4}$ yards of canvas to make the tilt and a shed to arm in, and a mast was provided for a great spear or two spears. Beer and bread were served for the master of the King's great galley and his servants and for other workmen at the setting up of the crabs that strained the cables for the tilt at a cost of *2s. 1d.*

This entry shows that even in the sixteenth century a canvas tilt, the barrier originally adopted at Arras in 1429,[10] was sometimes used, but in all the drawings of jousts of the sixteenth century the tilt is shown as composed of boards, generally about 6 ft. high.

For the hire of a boat to bring a capstan and crabs from the King's great galley for this purpose *12d.* was charged.

The 'great spear' was used by 'Nic Carew, called the Blue Knight when he ran with the great boordon'.

Some of these bordons or bourdonasses in the Tower are 9 in. in diameter just above the grip. Of course, these weapons are hollow and are made of light poplar.

The lances used in the German jousts were frequently of great thickness through the whole length. In an engraving by Cranach we find the squire shown riding in front of his master with the point of the lance resting on his shoulder. Presumably he sheered off at the moment of impact.

The next cheque (plate IX)[11] is from a volume of heraldic MSS. in the possession of the Society of Antiquaries (no. 135) which refers to jousts at the Field of the Cloth of Gold. The two pages of this document are carefully but coarsely emblazoned with the shields of the English and French kings and of nobles of both nationalities who took part in the various jousts. It was apparently

[1] Charles Brandon. [2] Henry Bourchier, 'lieut.-general of spears.'

[3] ? Sir Nicholas; held the lists against all comers at Guisnes; K.G. 1536.

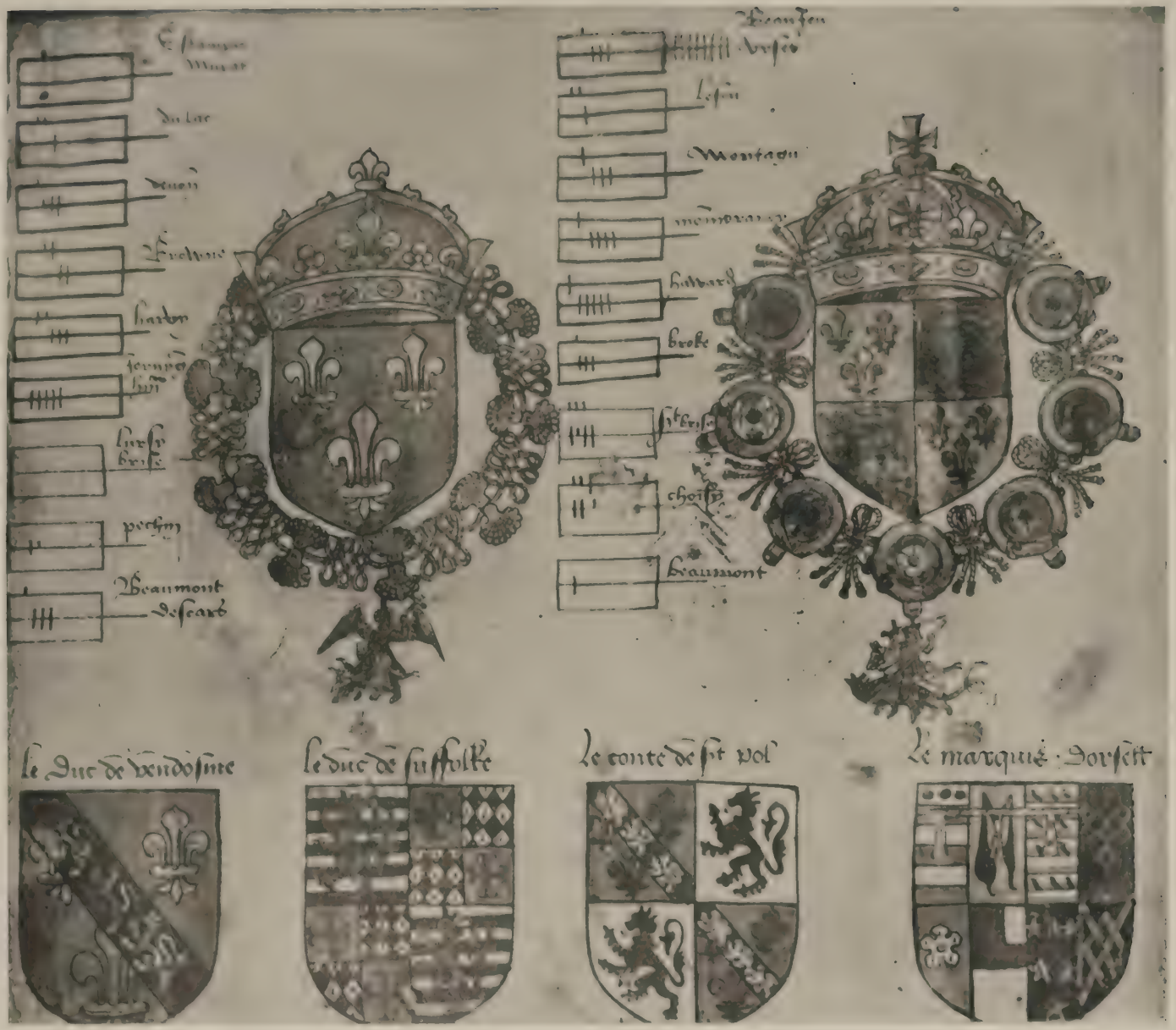
[4] Knighted at Tournay; overseer of the retinue of Henry VIII at Guisnes. Nicolas gives Baron Montague as Henry Pole, son of Countess of Salisbury; admitted to House of Lords 1533; beheaded 1539. [5] See note 2 on page 37. [6] Speaker of the House of Commons.

[7] Constable of the Tower, Captain of the Yeomen of the Guard.

[8] Knighted 1511; captain of the *Gret Barbara*; served in Tangiers, Brest, Ireland, &c.; High Marshal of Calais 1524; Captain of Guisnes 1540; K.G. 1543.

[9] One of 'the King's spears'. [10] Monstrelet, Johnes's trans., vi. 333.

[11] Noticed by Mr. Oswald Barron, F.S.A., in the *Encyc. Brit.* (11th ed.), and reproduced under 'Heraldry' in the same work.



JOUSTING CHEQUE OF THE FIELD OF THE CLOTH OF GOLD IN THE POSSESSION OF THE SOCIETY OF ANTIQUARIES

Published by the Society of Antiquaries of London, 1912

a kind of official programme, probably belonging to a herald or king of arms who jotted down scores on the margin. Neither Hall nor Sanuto give any account of these particular jousts, and, from the names of the participators, we may assume that it was a more or less informal contest between the members of the two royal staffs, for the names of the majority do not occur in any of the records as important personages.

In 1520 Jehan Lescaille published an account of the jousts at the Field of the Cloth of Gold, with the Ordinances and Conditions of the Contests. He gives the names of all those who fought on the several occasions, and in some instances he gives the number of lances broken by each man, but he does not mention this contest, neither does he record many of the names found on this document as being competitors in any of the other jousts.

The names on this cheque are: Challengers—Estampes,[1] Moret,[2] Du Lac, Devon,[3] Browne,[4] Harvy, Jerningham,[5] Lursy Brise,[7] Pechy,[8] Beaumont, Descard. Defenders—Beaujeu,[9] Lescu,[10] Montagu,[11] Monmorenci,[12] Haward,[13] Broke,[14] St. Brise,[15] Choisy,[15] and Beaumont.

Eight courses were run, but they are only recorded on the top right-hand cheque under the name Beaujeu.

The last cheque under our notice (plate VIII, fig. 2) is found in Ashmole MS. 845, fol. 164, and records jousts held at Westminster on May Day, 1570 (12 Eliz.). This occasion is chronicled by Holinshed, but no details are given. The entertainment lasted from the 1st of May to the 3rd, and included 'just at the tilt, tourneie and barriers'. The Challengers were Edward, Earl of Oxford,[16] Sir Henry Lee,[17]

[1] Count d'Estampes. [2] In attendance on Henry.

[3] Henry Courtenay, son of William (see note 1, page 36), Marquis of Exeter and Earl of Devon; beheaded 1539.

[4] Sir Anthony, prize-winner at Guisnes, Standard-bearer of England, Master of Horse 1539, K.G. 1540.

[5] ? Sir George Harvey of Bedfordshire, one of the retinue of Henry VIII.

[6] Sir Richard, prize-winner at Guisnes; Treasurer of Tournay 1516-17.

[7] M. de Lursy, in attendance on Francis.

[8] Sir John, Deputy of Calais and an expert jouster, whose name frequently occurs in Hall's description of these entertainments. [9] Prize-winner at Guisnes.

[10] In attendance on Francis, and brought twelve companions dressed in black to the jousts of June 14. He was killed at the Battle of Pavia 1525.

[11] See note 4, page 46.

[12] Anne de Montmorency, Constable of France, on the staff of Henry VIII; a prize-winner.

[13] Prize-winner at Guisnes; see note 4, page 37.

[14] Rate (?) Broke, whom Hall describes as a strong man, and who had charge of the King's great horses. [15] Prize-winners at Guisnes.

[16] Edward de Vere, suc. 1562; attended on the Queen at her state visits to Oxford and Cambridge; Commissioner for the trial of Mary Queen of Scots; volunteered with the Fleet against the Armada; published several poems; M.A. Oxon. and Cantab.

[17] Master of Ordnance; President of the 'Society of Knights Tilters' and champion of the Queen; knighted 1553; Master of the Armouries 1580.

Christopher Hatton,[1] Lord Charles Howard,[2] of whom the first named appears to have been the winner. It is particularly interesting as showing the arms of many of the jousters. The scoring, when compared with the cheque on plate IV, is easy to understand, for there are only spears broken and attaints given, and the debatable mark touching the centre line does not appear. Lord Dillon has noticed this score-sheet in *Arch. Journ.*, lv. The Answerers were Lord Stafford,[3] Thomas Cecil,[4] Henry Knolles,[5] Thomas Knyvet,[6] Robert Colsell, Thomas Beddingfield,[7] Thomas Conniesby,[8] Lord Henry Seymour, Henry Grey,[9] Henry Knyvet, William Knolles,[10] Launcelot Bostock, Thomas Moore, Roger Clopton, Sir Edward Herbert,[11] William Howard,[12] William Norreys, Rauf Lane,[13] Brian Annesley, William Worthington, Robert Alexander, Sir George Cary, Sir Gerome Bowes,[14] Richard Burkley, George Delves, Henry Macwilliam, and Richard Blount. The Earl of Oxford, who won the prize, ran forty-two courses, in which he broke thirty-two lances (twice breaking a lance at each of his six courses), and scored three attaints on the head. Sir Henry Lee, to whose cheques are added the arms of the Lees of Quarendon and also of his grandfather Sir Robert Lee, ran forty-one courses and broke thirty-two lances.

In the Ashmole MS. 845, fol. 166, is a sheet of blank cheques headed: 'The Tournay holden at Westminster on Monday the 15th of May, 1581.' The occasion of this tourney was the visit of the French Ambassadors to Elizabeth.[15] The Challengers were the Earl of Arundel,[16] Lord Windsor,[17] Sir Philip Sidney, and Sir Fulke Greville, who, according to the romantic tradition followed in jousts and tourneys, called themselves 'The Four Foster Children of Desire'.

[1] Lord Chancellor 1587.

[2] Lord High Admiral at the Armada; created second Lord Howard of Effingham; Earl of Nottingham 1597; M.A. Cantab. 1571.

[3] Edward, third Baron, suc. 1566; M.A. Oxon. in the same year; Vice-Admiral of county of Gloucester.

[4] Second Lord Burghley, suc. 1598; K.G. 1601; Earl of Exeter 1605.

[5] Esquire to the Queen; son of Sir Francis Knollys.

[6] Created Lord Knyvet 1607; Gentleman of the Privy Chamber; received the confession of Guy Fawkes.

[7] Author of *The Art of Riding*, and translator of Macchiavelli's *History of Florence*.

[8] Treasurer to the Queen; 'muster master' of English forces at Rouen in 1591; knighted same year.

[9] Lord Grey of Groby, grandson of the second Marquis of Dorset; father of the first Earl of Stamford.

[10] Treasurer to the Royal Household 1602; Baron Knollys 1603; K.G. 1615, Earl of Banbury 1626.

[11] Sheriff of Montgomeryshire.

[12] ? Sir William of Lingfield, second son of Lord Howard of Effingham.

[13] First Governor of Virginia; 'Chief bell-ringer of Ireland'; Keeper of Southsea Castle.

[14] Ambassador to Russia 1583; an expert horseman who tamed wild horses for the Czar.

[15] The visit was to endeavour to arrange a marriage between Elizabeth and the Duke of Anjou, and the entertainment was very costly, for the temporary banqueting-house alone cost £1,744 to erect.

[16] Philip Howard, succeeded 1580, attainted 1591, died in the Tower 1595.

[17] Fourth Baron Windsor of Stanwell.

The gallery adjoining the Palace of Whitehall, at the end of the Tilt Yard, was called, 'and not without cause,' the Castle or Fortress of Perfect Beauty. The entertainment was originally fixed for the 1st of May, but was postponed 'for certain urgent occasions' to the 8th, and then again to Whitsun Monday, the 15th. The Challengers all wore gilt and engraved armour, and each entered with high-flown addresses in prose or verse to the Queen.

The Defenders were Henry Grey,[1] Sir Thomas Perot, Anthony Cooke, Thomas Ratcliffe, Henry Knolles, William Knolles,[2] Robert Knolles, Francis Knolles, Rafe Bowes, Thomas Kelwaie, George Coring, William Tresham, Robert Alexander, Edward Dennie, Hercules Meantus, Edward Moore, Richard Skipwith, Richard Ward, Edward Digby, Henry Howell, and Henry Brunkerd.

Sir Henry Lee came in 'as unknowne' and broke six staves and then went out. The tourney is described as being very strenuous, 'as the shivering of the swords might very well testify,' and each event was introduced with the wearisome orations which are so characteristic of Elizabeth's entertainments. The mythology seems to have been complicated, for the combatants fought for the Golden Fleece, but were introduced severally by cupids and angels, and Sir Thomas Parrot and Mr. Cooke appeared in full armour as Adam and Eve, the latter with hair 'hung all down his helmet'.[3] There is no record as to the result of this tourney.

Another cheque, undated, with names appended but with no scores marked, is found on fol. 167 of the same MS. (Ashmole 845).

The following inventory of equipment for jousts is found in the Record Office under the year 1518:

Bards bosses saddles and harness for the King, his three spare horses and the seven noblemen challengers on his side.

A barde for the Kyng's grace on the first day of the Tourneys covered with rich white cloth of tissue, bordered with russet velvet embroidered with damask silver and bosse, saddle &c. of the same suit. For the 3 spare horses a bard, &c. of cloth of silver and russet velvet embroidered with the lion of England, powdered with crowns imperial, clouds and suns. Another suit of cloth of silver, russet velvet, and cloth of gold of damask, embroidered with dragons, powdered with red roses.

Another suit of the same stuffe embroidered with greyhounds powdered with portcullises.

For the seven challengers, seven suits of cloth of gold of damask, white, bordered with russet velvet, embroidered with cloth of silver of damask.

The second suit. For the King one half of a piece wrought in the stole, the other, white and russet velvet embroidered.

[1] Succeeded as Lord Grey of Ruthin and Earl of Kent 1533; Commissioner for the trial and execution of Mary Queen of Scots.

[2] See note 10, page 48.

[3] Holinshed's *Chronicles*, sub anno.

For the 3 spare horses, one suit, cloth of silver and russet velvet, embroidered with white harts with crowns and (cha)ynes about their necks, powdered with suns. Another suit, cloth of silver russet velvet and cloth of gold of damask, embroidered with b(lack) ballis powdered with white roses. Another the same stuff embroidered with white roses (and) suns, powdered with falcons and fetherlocks.

For the seven challengers, one half, cloth of tissue ; the other half, cloth of silver and russet velvet, embroidered like the King's but not so rich.

The third suit. For the King, cloth of silver embroidered with a tree damask gold, flat with a border (of) russet velvet with cut of goldsmith's work.

For the 3 led horses, cloth of silver and russet velvet, powdered with castles, pomegranates, and great roses crowned. The same embroidered with a hand coming out of a cloud, holding a branch of roses and pomegranates powdered with H. and K. The same embroidered with true loves and hearts with a great H. and K.

For the seven challengers, cloth of silver of Venice with a tree like the King's of cloth of gold with a russet border and a cut of cloth of gold.

Trappers, bosses, saddles and harness for the first day of the jousts.

For the King, on one side, cloth of gold of tissue ; on the other cloth of silver raised, and russet velvet enriched, undye fashion.

For the 3 led horses, trappers of cloth of silver damask and russet velvet lozenged, powdered with fleurs de lis, roses, and half roses with pomegranates, cloth of silver, covered with embroidery cut work and a border of russet velvet.

The third, half cloth of tissue, and half cloth of silver and russet velvet, embroidered with roses, fleurs de lis and pomegranates, with saddles &c. of the same colours as the King's apparel.

For the seven challengers — Half cloth of damask, half cloth of silver of Venice, and russet velvet undy fashion, embroidered like the King's, but not so rich.

The second suit — For the King cloth of silver and (russ)et velvet, embroidered with eglantine branches richly 'ennewed' with damask gold.

Three harnesses for the led horses. For the seven challengers suits like the King's but not so rich.

The third suit. For the King russet velvet clouded with cloth of gold of damask and cloth of silver.

For the three led horses, trappers of cloth of silver, and russet velvet, embroidered with roots, cloth of gold and russet velvet, embroidered with falcons and ostrich feathers, and russet velvet embroidered with a covert of broom and white birds, with saddles and harness of the same colour as the King's apparel.

For the seven challengers—Suits like the King's but not so rich.

Memorandum of the silks belonging to the King, the challengers and their horses.

Cloth of gold of damask 350 yds. Cloth of gold of Venice $269\frac{1}{2}$ yds. Cloth of silver damask $148\frac{1}{4}$ yds. Cloth of silver of Venice $408\frac{1}{2}$ yds. Russet velvet $764\frac{1}{4}$ yds. White velvet 108 yds. Cloth of tissue rich damask gold $24\frac{1}{2}$ yds. Cloth of tissue Venice $70\frac{1}{2}$ yds. Cloth of silver damask tissue raised $7\frac{1}{2}$ yds.

III.—*Wall Paintings in the Infirmary Chapel, Canterbury Cathedral.*

By W. D. Caröe, *Esq., M.A., F.S.A.*

Read 30th November, 1911.

Professor Willis's plan in his *Architectural History of the Monastery of Christ Church* lays down very clearly the form of the Capella Infirmorum and its relation to the Domus Infirmorum and surrounding buildings. The chapel was of late Norman construction, and consisted of a short nave and aisles of four bays, with a square-ended chancel. The nave has a characteristic Norman clearstory, and was separated from the chancel by a chancel arch, but the main features of the nave exist *in situ* for any one to examine, and need not detain us. The chancel was lighted by two Norman windows on each side, which were shafted, had late Norman, almost Transitional, carved capitals and a rich zigzagged archivolt. In the east wall were three windows of similar detail. The normal thickness of the chancel walls is 4 ft. 2 in. They were unbuttressed, and the whole was ceiled with a plain barrel vault, covering a span of 26 ft., somewhat wide for so small a building.

There is a peculiarity in the plan which must be noticed. On each side of the chancel just behind the chancel arch was a recess 12 in. deep and about 5 ft. 6 in. long, though the exact length cannot now be ascertained with accuracy. The wall at the back of the recess is not external, but is covered by the aisles, which extend eastward beyond the line of the chancel arch. The recesses probably extended the same distance eastward. The barrel vault sprang from the back of these recesses, and must therefore have become segmental further east. The object of these recesses can only be surmised. It may have been to make more space for the choir. I may add that the chapel had round arched sedilia, of which only traces remain. The whole of the ashlar work shows fine chiselling and close jointing. In the absence of documentary evidence the date of the erection of the chapel may be attributed to 1140–50.

The chapel is indicated and named upon the well-known drawing of the waterworks of Prior Wibert's time (1153-67), now in the Library of Trinity College, Cambridge. The date of the charter for the water supply falls between 1148 and 1162, as clearly set forth by Willis. The drawing shows an apse to the chapel, which Willis surmises to be a conventional representation, but there is the bare possibility that the drawing may be correct, and that a square east end supplanted an earlier apse after the drawing was made. The dates, it will be

noticed, lie very close together. The four bays of the nave are correctly shown on the drawing so far as the aisle is concerned, but a fifth window has slipped into the clearstory, and there are other inaccuracies. 'An engineer's and not an architect's drawing,' Willis calls it.

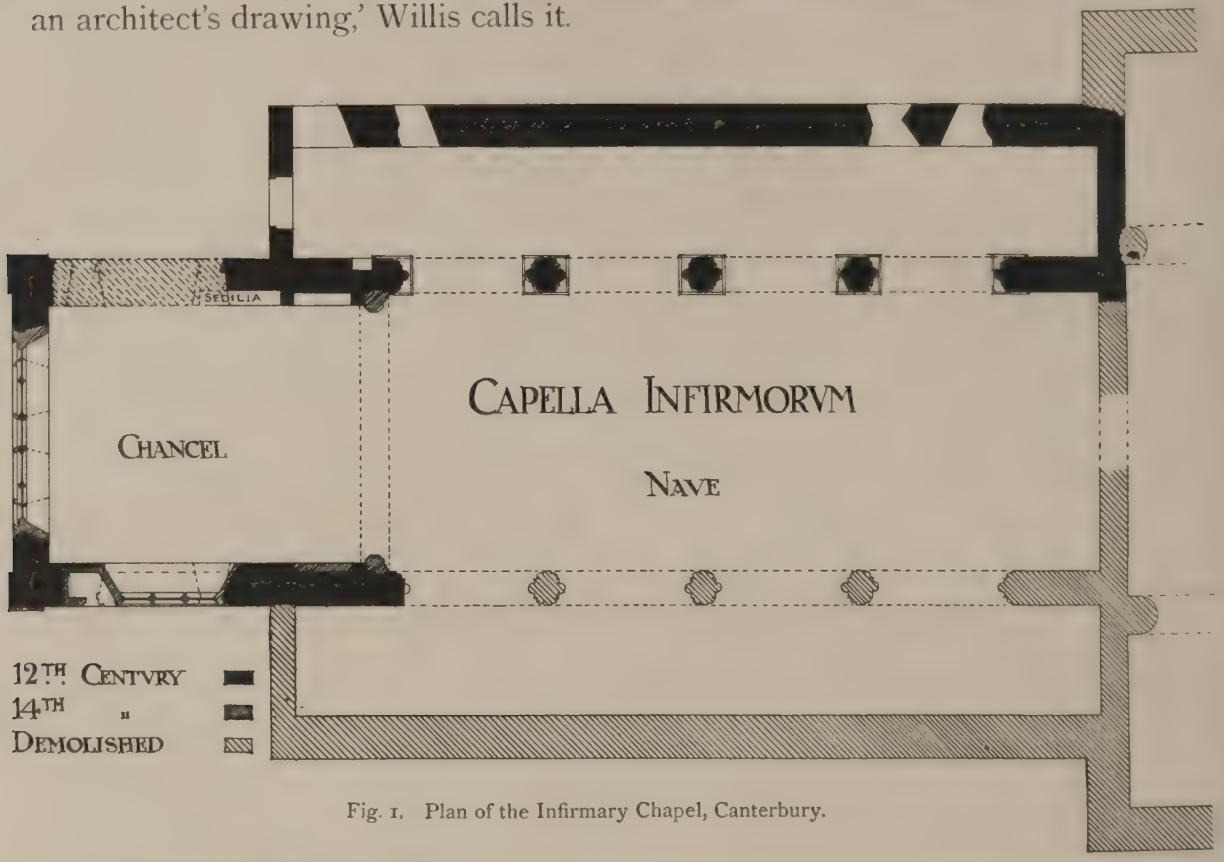


Fig. 1. Plan of the Infirmary Chapel, Canterbury.

In the middle of the fourteenth century the chancel underwent a complete transformation. The treasurer's accounts between the dates 1337 and 1370 –just the period of Prior Hadebrande's rule—are unfortunately missing, and in the absence again of documentary evidence the work may be attributed either to Prior Richard Oxyndenne (1331-8) or to Prior Robert Hadebrande (1338-70). The latter is thus described in the monastic chronicle printed by Mr. Woodruff for the first time this year in volume xxix of *Archaeologia Cantiana*:

'Ille famosissimus dominus qui prioratum in omni honore et magnificencia, honorifice et splendide gubernavit.'

Oxyndenne erected and paid for the well-known five-light window with the so-called Kentish tracery in St. Anselm's Chapel in the Cathedral, 1336, while close to the Infirmary chancel Hadebrande in 1338 erected the Master's Hall of the Infirmary, called also the Table Hall, which likewise had windows of similar tracery. Somner quotes an entry to this effect, and must have had

access to documents not now extant. As we have Kentish tracery in the work of reconstruction of the Infirmary chancel, it may reasonably be assumed that one of these priors, probably the latter, was responsible for the work.

It is not difficult to discover why the transformation of the chancel was undertaken. As already noted, it had a plain barrel vault, and was divided from the nave by a wide arch having but slight responds. The abutments of this arch—and to a lesser extent of the barrel vault where the walls are thinned by the

Fig. 2. The Infirmary Chapel, Canterbury: north elevation.

recesses—had in the course of the two hundred years of their existence proved insufficient for the thrust. The northern respond had gone over no less than 10 in. in its height up to the capital, and there can be no doubt that the structure of the arch, and, in sympathy with it, the western part of the vault, must have been in a very dislocated condition, if not actually ruinous. The repairs undertaken were drastic enough, and, as usual in those days, paid no respect whatever to what had gone before.

The process was to fill up the recesses on the inside, and to build a new chancel arch beneath the position occupied by the old arch, the new jambs being vertical and covering up the Norman jambs. The new masonry was carried up until it cut the line of the barrel vault; and, above this point of meeting, the vault seems to have been removed and a wooden roof made to complete the new design. The thickness of the new masonry of course varied with the outward lean of the wall, and thus was greatest at the springing line of

the vault. To this process we are indebted for the preservation of the Norman paintings which have recently come to light.

The tops of the walls had become clothed in a thick vegetable growth which was gradually disintegrating them. It became necessary for their preservation to clean them and take protective measures. In this process the straight joint

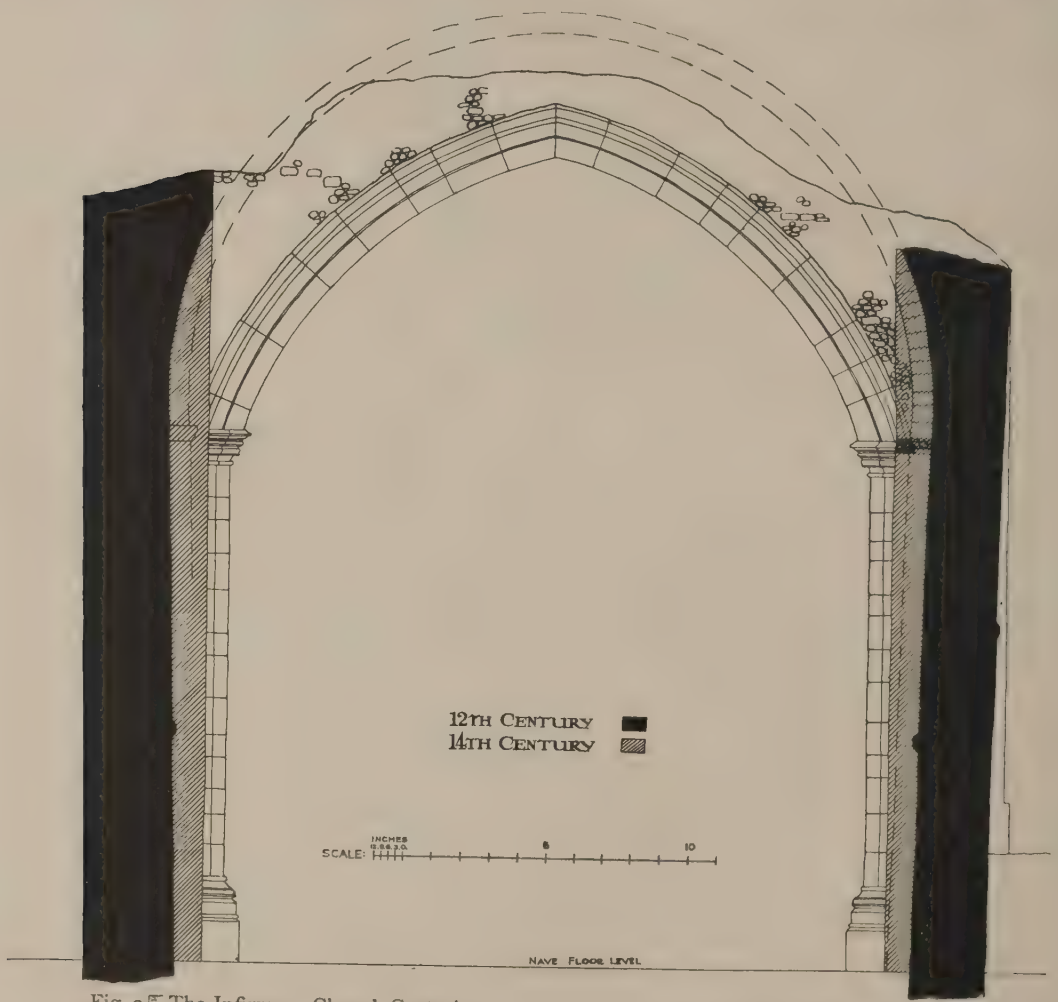


Fig. 3. The Infirmary Chapel, Canterbury: cross-section through chancel, looking west.

between the barrel vault and the later masonry came to light, and in connexion with it signs of painting. Investigation was therefore made, with the results here recorded. Unfortunately the fourteenth-century work was too well done. It was what is technically known as block bonded. Blocks of solid masonry were cut at intervals into the old wall, the painting thus remaining only upon the intervals between the bonded blocks.

WALL PAINTING IN THE INFIRMARY CHAPEL, CANTERBURY

Published by the Society of Antiquaries of London, 1912

It would appear that subjects in panels architecturally framed occupied the wall area. Near the springing of the barrel was a frieze of beasts possessing no doubt some symbolic significance. Angels in attitudes of adoration formed an important part of the scheme for the vault. The outer order of the Norman chancel arch and jamb, which was square, was picked out in a sort of strap-work in colour, and in connexion with this a very curious capital has come to light which has no abacus. The angels painted on the barrel vault are in pairs in panels, as though looking out through a window. The circles enclosing the beasts are set in square frames, the angles adorned with conventional foliage. A dog or bear seems to be engaged in carrying off a small-horned beast of the deer tribe. Perhaps the symbolism is quite simple, but I have not been able to hit upon the explanation—if there be one (pl. X).

The figure subject (fig. 4) is probably one of a series which covered the walls. It clearly represents the Virgin and Child attended by saints, of whom the figure on the left is that of a layman, possibly a king in armour, clad in mail and surcoat. There is some confusion about the legs, suggesting that there was another figure behind. The upper coat of plaster has peeled off, and what is seen is a first sketch which has not been followed in the final design. I must call attention to the painting of the foot of the Infant Christ, into which the painter seems to have put his best work. It is singularly free from archaic qualities, and makes us regret that so little of the whole composition remains, and specially that the head of the Virgin is not preserved. The architectural setting of the panel consisted of a tall tower ending in a domed roof. The tower was represented as of ashlar work, double lines being used for the perpends. One is of course instinctively reminded of Kempley, which antedates this work by a few years. There we have also a barrel vault, upon the crown of which the Saviour is enthroned, surrounded by emblems of the Evangelists, seraphs, St. Peter, and the Virgin. On the walls are the Twelve Apostles in attitudes of adoration.

These Canterbury paintings were about 200 years old when they were covered up, and part of their interest lay in their unfaded and fresh condition—a proof of the purity of the atmosphere in those days. I regret I have to use the past tense, because owing to condensation they have suffered materially since their discovery. The work is executed in tempera upon a dry plaster ground. The plaster was laid upon a flint backing, and was brought out flush with the dressed stonework. Over the plaster and stone was laid a thin coat of white distemper as a ground for the painting. The painting has mostly gone from the face of the stone, though this remains stained by the colours, which seem to have penetrated the distemper coating.

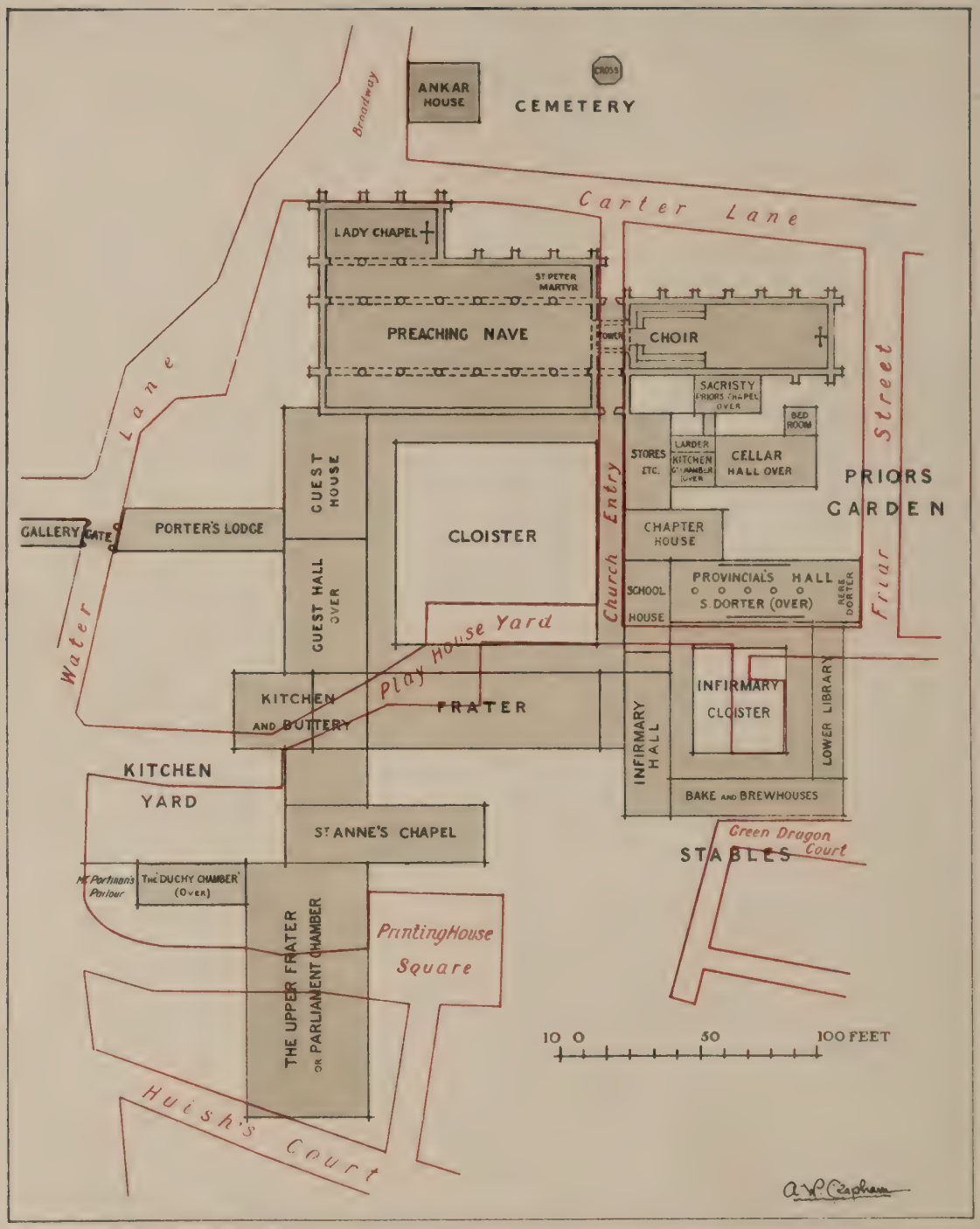
A careful comparison of these paintings with those of the well-known Chapel of St. Gabriel in the Cathedral leads to the conclusion that they are of the same

school, if not by the same hand. This series was fully described in volume xiii of *Archaeologia Cantiana* with copious illustrations. There is a marked similarity in the painting of the Child's foot in the Infirmary chapel example with that of the Saviour's foot in St. Gabriel's Chapel, and the drawing of the angels

Fig. 4. The Infirmary Chapel, Canterbury: wall painting of Virgin and Child.

and the pose of their heads may be compared with those we have been considering.

I ought to add that the copies of the Infirmary paintings were made by my pupil Mr. Cook, who deserves much credit for his careful work, expressing as it does the feeling of the originals very carefully. These copies are now specially valuable owing to the deterioration of the paintings since their discovery.



RECONSTRUCTION OF THE PLAN OF THE PRIORY OF BLACKFRIARS
(Modern streets indicated in red)

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IV.—*On the Topography of the Dominican Priory of London.* By Alfred W. Clapham, *Esq.*

Read 18th January, 1912.

The remains of the Dominican houses in England are so inconsiderable as to give little indication of the former power and influence of the order. The Dominican convents, however, outnumbered those of any other mendicant order, and while the popularity of the Blackfriars amongst the lower classes probably never equalled that of the Minor brethren, yet in court favour and aristocratic support the Dominicans held the higher place, and a succession of their friars occupied the post of confessor to the later mediaeval kings.

The order has left but one architectural monument of prime importance in England—the church of St. John the Baptist at Norwich,[1] which is of especial interest as being the most complete friars' church now standing in this country, though even here the loss of the steeple has robbed it of its most distinctive feature. Elsewhere the Dominican remains are of the most fragmentary description. At Gloucester portions of a small church and extensive domestic buildings are now transformed into dwellings;[2] at Newcastle the cloister square remains much altered; at Canterbury,[3] Bristol,[4] and Hereford one of the ranges flanking the cloister stands at each place; while of the important house of King's Langley,[5] Herts., only a subsidiary building of uncertain use is standing. To these may be added the ground plan of the small establishment at Cardiff,[6] recovered by excavation, and a few fragments at Boston, Bamburgh,[7] and elsewhere.

The Dominican Priory of London was founded in the year 1221, the first house having been on the south side of Holborn.[8]

[1] See plan in Harrod's *Gleanings among the Castles and Convents of Norfolk*, p. 73.
[2] See plan and paper by Rev. C. F. R. Palmer in *Arch. Journ.*, vol. xxxix, p. 296.
[3] See reproduction of old plan in *Archaeologia Cantiana*, vol. xiii, p. 87.
[4] See plan and paper by J. Taylor in *Trans. Bristol and Gloucester Arch. Soc.*, vol. iii, p. 232.
[5] See plan in *V. C. H. Herts.*, vol. ii, p. 239.
[6] See paper and plan by E. P. Loftus Brock in *Proc. of Brit. Arch. Assoc.*, vol. xlix, p. 306.
[7] A view of the ruins appears in *A History of Northumberland*, vol. i (Bamburgh), 1893, p. 138.
[8] The site of the first house is fully discussed by W. Paley Baildon in the *Black Books of Lincoln's Inn*, vol. iv, p. 263.

In the course of the great rebuilding works of Henry III at Westminster Abbey, the Dominicans obtained a number of grants of materials originally designed for that place. For instance, amongst the Westminster muniments is an order 'that the Friars Preachers of London have 1,000 freestones for their works', and again, 'that five figures of kings carved in freestone and a pedestal for a figure of the Virgin be given to the Friars Preachers for making their aqueduct.'[1] Further orders mention large quantities of lead for the same purpose, and 2,000 lb. of stone for their works (1258-61).[2] The extensive works here indicated make it difficult to explain the sudden abandonment of the old site and buildings fifteen or sixteen years later, and one is tempted to surmise that the elaborate and almost new conduit house with the statues of the kings was removed and re-erected in the new cloister.

In 1274 Robert Kilwardby, Archbishop of Canterbury, himself a Dominican, obtained for them a new site between Ludgate and the Thames, including 'two lanes next the street of Baynards Castle together with the tower of Mountfichet to be destroyed',[3] by gift of Gregory Roksley the mayor and the barons of the city. Licence was likewise obtained to destroy the city wall running due south from Ludgate, and to include within the precinct all the land west of this to the Fleet ditch; the city wall to be rebuilt to enclose and surround the addition.

The expense of the erection of the new house was partly borne by the Archbishop, but King Edward I and his consort contributed so freely to the work as to be accounted founders of the new convent.[4] Some 550 marks were obtained from the sale of the old site to Henry Lacy, Earl of Lincoln,[5] and the destroyed Mountfichet's Tower provided an ample and inexpensive quarry for building material. Archbishop Robert was able before his death, which occurred in 1279, to transfer his attention to founding another Dominican house at Salisbury.

A contemporary account asserts that the church was not begun till 1279,[6] and an entry in the *Close Rolls*, dated May 8, 1287, records a royal grant of 100 marks for the new church.[7]

In 1281 Richard de Stratford,[8] a novice of the order, left certain tenements for the building of a chapter house, and the erection of the cloister followed shortly after, as in 1292 (April 24th)[9] the convent had licence to fell timber to the

[1] *Hist. MSS. Commission*, 4th Report, p. 176.
[2] *Ibid.*
[3] Stow, *Survey of London*, edit. 1633, p. 373.
[4] They are so named on the list of burials, Harleian MSS. Plut. 6033.
[5] *Cal. of Close Rolls* 1279-88, p. 428.
[6] *Memorials of Edward I and II*, Rolls Series, vol. i, p. 88.
[7] *Cal. of Close Rolls* 1279-88, p. 448.
[8] Sharpe, *Court of Husting Wills*, vol. i, p. 52.
[9] *Cal. of Patent Rolls* 1281-92, p. 484.

value of £10 in the forest of Essex for that purpose. In 1204,[1] and again in 1301,[2] occur similar grants of timber from Windsor and Tonbridge forests, in the former case for making a quay 'at their house in London of the king's gift'.

A few grants of the fourteenth century bear witness to a gradual enlargement of the convent site, most of the property being described as in the parish of St. Andrew by the Wardrobe.[3] The latest and most important of these (dated August 24, 1352)[4] concerns 'a messuage called Okebourn between their dwelling and the Thames in the ward of Castle Baynard'. This was the Inn of the Priors of Okebourn, Wilts., a cell of Bec Abbey, and was evidently disposed of by the Abbot of Bec in view of the precarious tenure of their lands by the alien houses.

A further indication of the position of Okebourn Inn is given by a confirmation (1309)[5] of an indenture between the mayor and the convent as to the closing of a lane extending from the gate of the Prior of Okebourn on the east to the Fleet towards the west. This property must shortly afterwards have been alienated, as Stow records that it was granted by Henry VI to King's College, Cambridge.[6]

Little further information is available as to the site and buildings of the priory previous to the Dissolution, but their size and importance is proved by the variety of uses to which they were put by the later mediaeval kings. The Privy Council frequently met here, more especially during the early years of Henry VI, and the frater is mentioned on one occasion as the place of meeting.[7] Three parliaments sat here in the years 1450,[8] 1523–4,[9] and 1529,[10] probably in the hall known as the Parliament Chamber. In 1522 the Emperor Charles V was lodged in the guest house, his train being housed in the newly erected palace of Bridewell.[11] For this occasion Henry VIII constructed a long gallery spanning the Fleet river and connecting the two buildings, the city wall being breached for the purpose.[12] Seven years later (1529) the question of the king's divorce was tried before Cardinals Campeggio and Wolsey 'in the Parliament Chamber near the Friars Preachers', the king and queen lodging meanwhile at Bridewell.[13]

The convent was surrendered by the commendator, Prior John Hilsey, Bishop of Rochester, on Nov. 12, 1538,[14] when the inmates numbered sixteen, a

[1] *Cal. of Close Rolls* 1288–96, p. 373.
[2] *Ibid.*, 1296–1302, p. 451.
[3] *e.g.*, *Cal. of Patent Rolls* 1307–13, pp. 483, 556, &c.
[4] *Ibid.*, 1350–4, p. 323.
[5] *Ibid.*, 1307–13, p. 159.
[6] Stow's *Survey*, edit. 1633, p 405.
[7] *Proceedings and Ordinances of the Privy Council*, vol. iii, p. 209.
[8] *Rolls of Parliament*, vol. v, p. 171.
[9] Hall's *Chronicle*, edit. 1548, p. 106.
[10] *Ibid.*, p. 187.
[11] *Ibid.*, p. 98.
[12] Stow's *Survey*, edit. 1633, p. 436.
[13] *Letters and Papers, Henry VIII*, vol. iv, no. 5613.
[14] *Ibid.*, vol. xiii (2), no. 809.

remarkable diminution from the days of Edward II, when the convent numbered seventy friars.[1]

The principal sources of information available as to the site and buildings belong to the period of the Dissolution, and are contained in a series of grants to various persons of lands and tenements within the precinct. In addition to these some valuable surveys of the property dating from the early years of Edward VI are preserved amongst the documents of the More family at Loseley, near Guildford.

A much earlier and more general description of the buildings is to be found in the celebrated passage from *Pierce the Ploughman's Crede*. There seems little doubt that the author was a Londoner, and his description of a Dominican Friary almost certainly applies to the London house, especially as his description, where it can be tested, proves accurate.[2]

For many years previous to the suppression the precinct had been inhabited by a considerable number of the laity, who rented their houses from the prior. At the Dissolution several of these obtained grants of the property they occupied, amongst them being Lord Cobham and Lady Kingston.

At the dismemberment of the actual priory buildings the largest share went to Sir Thomas Cawarden, the Master of the Revels, who in 1550 (March 12) received a grant of the church, cloister, chapter house, and part of the guest house, besides the churchyard and other yards and closes. The Ankar's Lodging passed in 1544 to Thomas Godwine, and in the same year Paul Gresham and Francis Boldero received a part of the eastern range. A patent of Edward VI (1547) finally disposed of the prior's lodging, which had remained for some years in the occupation of Bishop John Hilsey, the former prior, and now passed to Sir Francis Bryan. One building only, described as a hall for storing the king's revels, remained in the hands of the crown.

THE PRECINCT.

The precinct of the Blackfriars was a walled enclosure containing about five acres, and is represented fairly accurately by the limits of the existing parish of St. Anne, Blackfriars, though the priory owned a number of contiguous tenements in the parish of St. Andrew by the Wardrobe, which may or may not have been included within the walls.

The precinct was bounded on the north and west by the city wall, rebuilt by the citizens during the closing years of the thirteenth century. It ran nearly due

[1] *V. C. H. London*, vol. i, p. 501, note.

[2] The quotations from this source are taken from the edition of the Early English Text Society, vol. xxx.

west from Ludgate, turning to the south at right angles on the bank of the Fleet river, and being protected at this point by a square tower. Proceeding southwards along the Fleet it terminated on the Thames bank in a large bastion, which is shown to be segmental in form in both Agas's and Braun's maps. At this point foundations of a wall have been uncovered cutting across the angle, which may possibly represent the arc wall of this bastion. Two subsidiary towers also protected this wall, the first half-way between Ludgate and the Fleet,[1] and the second just to the north of where later stood Bridewell bridge.[2] It is almost certain that it was also carried along the river front, and terminated in a tower over against Baynard's Castle.[3] At Puddle Wharf, however, the precinct boundary turned north for some 320 feet, and pursued an irregular line up St. Andrew's Hill, past the Wardrobe to Carter Lane, from thence cutting across to join the city wall at Ludgate.

In 1547 the precinct is described as being entered by four gates,[4] and of these three at least were mediaeval. The position of the first of them is doubtful, but it is not unlikely that it closely adjoined Ludgate at the point where Pilgrim Street turns southward. It is referred to in 1508 as 'the Cemetery Gate'.[5] 'The New Gate' undoubtedly stood at the west end of Carter Lane. It is mentioned in one of the Loseley MSS. as 'the late Blackfriars gate called New Gate next unto the lane called Carter Lane'.[6] A third gate was probably 'the Water Gate', which pierced the city wall about midway along the river front of the precinct, and is shown on most of the early views of London.

In 1550–2 a new bridge was erected at the Blackfriars across the Fleet ditch towards Bridewell,[7] the city wall having been previously breached at this point to admit the Bridewell-Blackfriars gallery before mentioned, built by Henry VIII in 1522 for the convenience of the Emperor Charles V. The existence of this gallery implies the necessity for a gate at this point, which is in all probability the fourth of those mentioned in 1547.

In addition to these outer walls and gates an inner enclosure existed, shutting off the domestic portions of the priory. It was entered by a gate in the common monastic position to the south-west of the nave, and adjoining it stood the porter's lodge.[8]

[1] See illustration in Smith's *Ancient Topography of London*, p. 26.

[2] See plan of precinct, after J. Leake, in the Soane Museum, Faintleroy Pennant, vol. iv, no. 107.

[3] *Cal. of Pat. Rolls*, 1307–13, p. 496.

[4] Strype's *Stow*, edit. 1720, Book III, p. 179.

[5] Brit. Record Soc. *London Inquisitions*, vol. ii, p. 115 (Peter Goberd).

[6] *Hist. MSS. Comm.*, 7th Report, p. 665 a.

[7] P.R.O. Declared Accounts, no. 3328.

[8] This gate is indicated on Agas's View of London (*c.* 1560–70).

The extent of the Blackfriars precinct with its walls and gates is specially remarked by the author of the Crede, and he mentions also the 'posternes in pryvytie to pasen when hem liste'.

Like the other London convents the Blackfriars had probably an elaborate system of water supply. All the information, however, available about it is that the conduit head was at Clerkenwell.[1]

THE CEMETERY.

The great cemetery of the Friars Preachers lay on the north side of the Priory church. It is described in Hugh Losse's[2] survey (preserved at Loseley, and dated 1550) as 'the churchyard on the north side of the body of the same church, containeth in breadth from the said church unto a certain brick wall, the houses, tenements and gardens in the tenure of Peter Hesiar and Mr. Holte, on the north side of the said churchyard 90 feet and in length from the houses and tenements of Mistress Partridge, Mr. Southcote and the Anker's House on the west end unto a certain wall adjoining to the King's highway on the east end 200 feet'.

Probably near the middle of this open space stood the pulpit or preaching cross. It is referred to in two wills, the earliest being that of Roger Jaket (1410)[3], who desires to be buried 'in the churchyard near the pulpit there', while William Thorley, citizen and bowyer, in 1431[4] directs that his body be laid 'before the cross in the churchyard'.

The structure in all probability resembled in form that still standing near the site of the church of the Dominicans at Hereford. It is described in the Crede as a 'curious cros craftly entayled with tabernacles y-tight, to toten all abouten', evidently referring to its polygonal form.

The Ankar's house was granted in 1544 to Thomas Godwine.[5] It was formerly occupied by anchoresses, and it is curious that in 1548 Katherine Man, the last of them, relinquished her rights over the Ankar's House to the commonality, and received a pension of 20*s*.[6] The author of the Crede remarks that 'the pris of a ploughlond of penyes so rounde to aparaile that pyler were pure lytel'.

THE CHURCH.

The size and general planning of this, the second church of the Friars Preachers in London, are of particular interest in that in point of date it was the

[1] *Acts of the Privy Council*, vol xxi, p. 402.
[2] Hugh Losse's survey is printed *in extenso* in Appendix I.
[3] Sharpe's *Court of Husting Wills*, vol. i, p. 391.
[4] *Antiquary*, vol. xxiii, p. 125.
[5] *Pat. Roll* 36 Henry VIII, pt. 23, m. 38.
[6] Steele, *Anchoresses of the West*, p. 100.

first of the series of rebuildings which were in turn undertaken at all the London friaries during the prevalence of the Decorated style in England. The Dominican church, as has been said, was begun soon after 1276, and was followed by the Franciscan in 1306, the Carmelite in 1350, and the Austinfriars in 1354. The first of these was likewise the smallest in dimensions, which appears to show that the magnificent ideas that subsequently prevailed amongst the Mendicant orders in the matter of church building had not at that time come into practice. The dimensions of the church, though by no means insignificant, were not at all remarkable, and show no approach to the proportions of the Greyfriars church begun some thirty years later.

It is fortunately possible to lay down the plan of the Dominican church with a considerable degree of accuracy, its chief dimensions being preserved in two surveys at Loseley. Hugh Losse's survey describes it as 'the site or soil of the said late church called the Blackfriars within the city of London with the two aisles, chancel and chapel to the same belonging, containing in breadth from the north churchyard to the south cloister 66 feet, and in length from the lodging of John Barnet gent. on the west end of the same church to the garden belonging to the mansion or tenement belonging to Sir Anthony Ager Kt. on the east end of the same church 220 feet'.

There are further references in the same survey to 'the stones of the arches of the body of the said church, with the windows, walls, buttresses and towers of the same church and the stones of the quire and of one chapel over the north side of the said church', and also to 'the whole lead of the body of the said church, of the two aisles, [and] of the lead of the roof of the vestry'.

From the information here contained it appears that the total length of the church was 220 ft., and the width of the nave 66 ft., but another Loseley survey preserves some further particulars of the west end.[1] Amongst the properties surveyed are two adjoining the west front of the church, and the particulars of these give the total width of the body or nave at this end as 66 ft., while the distance between the west front and the west wall of the cloister is given as 20 ft. on the return. Now the site of the cloister may be identified with absolute accuracy, and consequently from the data given above the position of the church can be definitely fixed.

In a line with the east walk of the cloister a narrow passage always known as Church Entry extends across the site of the church from north to south, and almost certainly represents the original entry beneath the steeple, similar in every way to a corresponding entry at the Greyfriars, Newgate Street, the site of which is also preserved in a public passage-way. On this site in 1843 were found two

[1] Printed in full in Besant's *Survey of London*, vol. ii, Appendix ix.

coffin-lids of Purbeck marble of the thirteenth century (one bearing the name Dame Joan . . .), together with fragments of columns, sculpture, and encaustic tiles.[1]

The eastern and western boundary being thus fixed, the length of the nave proves to have been 114 ft., which divided up gives seven bays. Deducting this from the total length, and allowing some 10 ft. for the internal width of the entry, 90 ft. or six bays are left for the length of the choir.

The dimensions of the three preaching naves of the London friaries of which definite figures are available compare as follows:

Greyfriars (1337) 132 ft. by 85 ft. 7 bays.
Austinfriars (1344) 153 ft. by 83 ft. 9 bays.
Blackfriars (1279) 114 ft. by 60 ft. 7 bays.

Adjoining the north side of the nave at its western end stood the chapel of Our Lady. Its position is fixed from two sources: the first is a reference to the foundation of the Cornwall chantry in the 'chapel of Our Lady in the cemetery of the Blackfriars'[2]—this fixes its position on the north side of the church, and a mention in the will of Robert Castell[3] adds further information. He desires to be buried in 'the church of the Friars Preachers over against (*desuper*) the chapel erected and founded in the same church in honour of the most blessed and glorious Virgin Mary (by the foundation of Joan late Lady Ingoldsthorp, sister of John late Earl of Worcester) and the west wall of the same church'.

The existence of this chapel at the west end of the north side of the nave is an excellent explanation of the increased width at this end of the church already mentioned (90 ft. as against 66 ft.), its external width being evidently 24 ft.

It was apparently standing before the foundation of the Cornwall chantry (1437), and appears to have been rebuilt by Lady Ingoldsthorp (d. 1494),[4] probably to receive the body of her brother, John Tiptoft, Earl of Worcester, 'the Butcher,' executed in 1470. Beside him was subsequently buried the headless trunk of James Touchet, Lord Audley, executed 1497.[5]

The steeple, as was usual in the larger friars' churches, stood between the

[1] *Gent. Mag.*, 1843, pt. i, p. 635, where illustrations are given of the two slabs.

[2] *V.C.H. London*, vol. i, p. 500.

[3] Wills, P. C. C., 40 Holgrave. The passage runs: 'in ecc̃e. fr̃m predicatoř londoñ, desuper capellam erect̃. et fundat̃. in eadem eccl̃ia in honore beatissime et gloriosissime virg̃is Marie, ex fundatione Johanne nuper dn̄e de Ingoldsthorpe ac nup. sororis Joh̃is nup. comitis Wigorn̄. et murū ejusdem eccl̃ie. occident̃ sepelien̄d.'

[4] Wills, P. C. C., 13 Vox. She desires to be buried 'in the chapel of our Lady set within the church of the Black Friars within Ludgate of London, in the same place where the body of Sir John Typtoft, late Earl of Worcester, my brother, resteth buried'.

[5] Kingsford's *Chronicles of London*, p. 216.

nave and choir, and probably over the centre of the modern passage called Church Entry. It was apparently still standing when the church was granted to Sir Thomas Cawarden (1550), and is expressly mentioned as the Campanile. The only representation of it of any value is in Van der Wyngaerde's view of London, where it is clearly shown as a polygonal structure with a pinnacled parapet and a spire, but whether of wood or stone does not appear. It was evidently similar in character to the Greyfriars steeples still standing at Coventry and Lynn, and probably stood over the curious oblong crossing so characteristic of the churches of the Mendicant orders.[1]

The choir was probably without aisles, as none are mentioned in the survey. In the Harleian MS. list[2] of burials at the Blackfriars, the third and fourth arches in the choir are mentioned, but these can only have been recesses in the wall or else connected with the roof construction, as one entry runs 'in the wall in the third arch'.

The dedication of the high altar, according to the Rev. C. F. R. Palmer, was to St. Mary and St. John the Evangelist. The only authority for this appears to be the representation on the Priory seals of the Crucifixion flanked by the Virgin and St. John. From a reference in the will of Lady Ingoldsthorp, however, it appears more probable that the correct designation was to God and St. John the Evangelist. She leaves 'a fair chalice to the high altar and a pair of candlesticks of silver in worship of God and St. John the Evangelist'.

There is evidence of the existence of a number of other altars, chapels, and images in the church, prominent amongst them being the three great Dominican saints. In addition to the lady chapel already mentioned, four of these may be probably placed in the nave. The following is a list of chapels, altars, and images, together with the various references found to them in wills:

Image of St. Peter Martyr, in the north aisle of the nave.

(1) Alice Botteley[3] (1460), 'to be buried in the churchyard by the wall of St. Peter of Myllan.'

(2) John Gull (1465),[4] citizen and spurrier, to be buried in the church 'within the aisle before or near the Image of St. Peter of Meleyn'. His wife Alice[5] mentions the nave as his burial-place.

[1] The examples at Lynn and Coventry, mentioned above, are the only two now standing in England, but the crossing at the Blackfriars, Norwich, still remains, and foundations uncovered at the Austinfriars at Warrington and Ludlow indicate the existence of similar features at those places. Steeples of this class are still very numerous in Ireland, and one (the Trinitarian Friars at Dunbar) still remains standing in Scotland. The Greyfriars tower at Richmond (Yorks.) is of the more ordinary type.

[2] This list is printed in Appendix II.

[3] *Antiquary*, vol. 23, p. 126.

[4] *Ibid.*, vol. 24, p. 28.

[5] *Ibid.*, p. 29.

Image of St. Erasmus, in the north aisle of the nave.

(1) Richard Billesden (1492),[1] to be buried 'in the body of the church of the Friars Preachers before the image of St. Erasmus on the north side of the church as nigh unto the wall there as may be'.

Altar and Image of Our Lady of Grace, in the nave.

(1) Elizabeth,[2] widow of John Jakys and Sir Thomas Frowick (d. 1515), 'to be buried in the body of the church of the Blackfriars before the image of our Lady of Grace, where I have edified and builded an altar.'

Altar and Image of St. Michael the Archangel, in the nave.

(1) William Cotton, gent.[3] (1458), 'before the image of St. Michael the Archangel in the body of the church.'

(2) Mary Asshebourne[4] (1496), 'near the altar of St. Michael the Archangel.'

(3) John Harbard[5] (1527), 'in the body of the church of the Friars Preachers in the middle of the church by St. Mighel.'

The Great Crucifix, probably on the rood beam in the nave.

(1) William Batyson,[6] citizen and merchant-taylor (1504), 'in the body of the church before the high crucifix there.'

Image of Our Lady of Pity.

(1) John Mosle, Esqre.[7] (1433), 'before the image of St. Mary, commonly called le Pyte.'

(2) William Stede,[8] citizen and vintner (1479), 'before the image of our Lady of Pity.'

Chapel of St. John the Baptist.

(1) Richard Spencer,[9] gent. (1509), 'to be buried in the chapel of St. John the Baptist which I did late cause to be made within the church of the Friars Preachers.'

Chapel of St. Anne.

(1) John Bailles,[10] fuller (1502), 'in St. Anne's chapel.'

(2) Roger Wotley[11] (1520), 'in the chapel of St. Anne within and adjoining the church of the Friars Preachers.'

Image of St. Thomas Aquinas.

(1) Elizabeth Denton[12] (1519), 'before the image of St. Thomas of Aquine.'

[1] Strype's *Stow* (1720), Book III, p. 182.
[2] Wills, P. C. C., 13 Holder.
[3] *Ibid.*, 15 Stokton.
[4] *Ibid.*, 3 Horne.
[5] *Ibid.*, 28 Porch.
[6] *Ibid.*, 14 Holgrave.
[7] *Antiquary*, vol. 23, p. 125.
[8] *Ibid*, vol. 24, p. 29.
[9] Wills, P. C. C., 13 Bennett.
[10] *Antiquary*, vol. 24, p. 76.
[11] *Ibid.*, p. 79.
[12] *Ibid.*, p. 78.

Fig. 1. Precincts of Blackfriars in 1677; from Ogilby and Morgan's plan

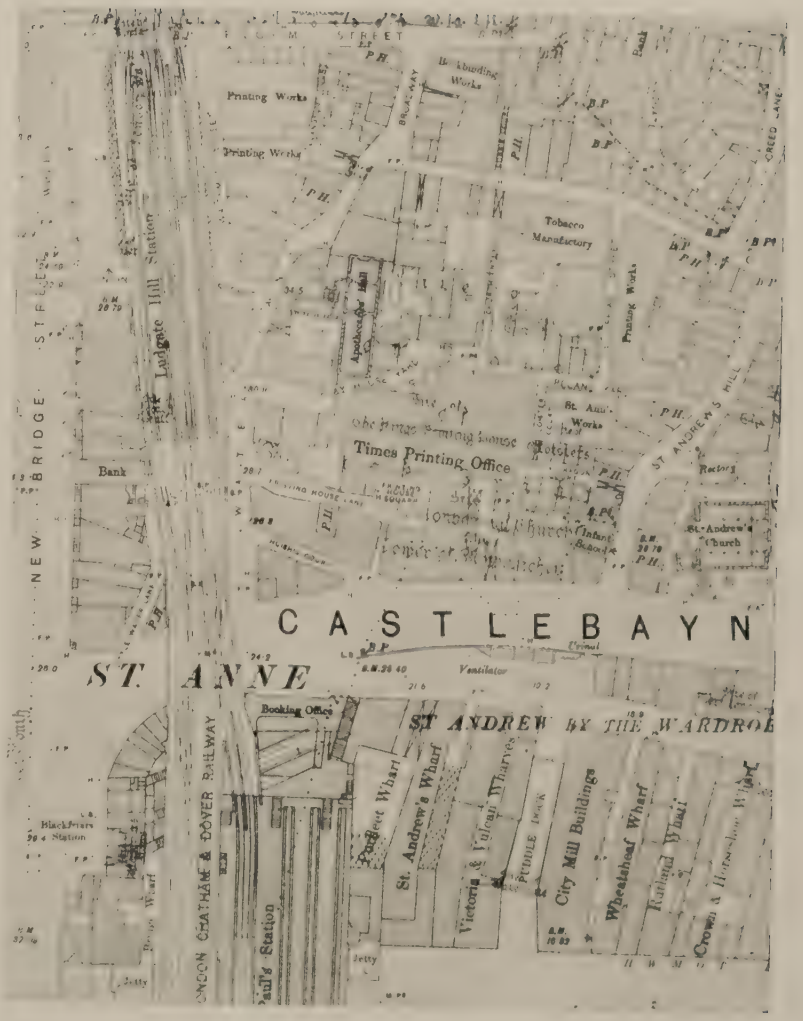

Fig. 2. Precincts of Blackfriars in 1902
(Reproduced from the Ordnance Survey Map with the sanction of the Controller of H.M. Stationery Office)

Published by the Society of Antiquaries of London, 1912

Image of St. Osyth.

(1) Margaret Croke[1] (1491), 'before the image of St. Sithe.'

Altars of St. Peter and St. Dominic.

(1) Edmund Talbot,[2] Esqre. (1466), 'item I bequeath two vestments of Lord Alexander with the emperor's and mine arms thereupon to the altars of St. Peter and St. Dominic in the said church.'

The Pardon Chapel.

(1) Thomas Dobbys,[3] citizen and fishmonger (1464), 'in the church of the Friars Preachers in the Pardon Chapel.'

Image of St. Patrick.

(1) Patrick Hegley,[4] of Devenham, Ireland (1404), 'before the image of St. Patrick.'

Two fraternities at least were established in the church of the Blackfriars, both in the early sixteenth century. The fraternity of St. Barbara was confirmed by Bishop Fitz-James in 1511,[5] while that of the Conception of the Blessed Virgin (for foreigners residing in London) received the royal licence the 23rd of Henry VIII.[6]

THE GREAT CLOISTER.

The great cloister is described in Losse's survey as 'The soil of the cloister, being at the south side of the body of the said church, containeth in breadth from the body of the said church to the lodging of Lady Kingston on the south side 110 ft. and in length from the wall belonging to the lodging sometime Sir Francis Braye's and now Sir Anthony Ager's knight and Mr. Walsingham's on the east part to the lodging of Lord Cobham or John Barnet on the west part 110 ft.'

The position of this cloister is fixed by the mention of Lord Cobham's house, which in 1632 became the Apothecaries' Hall. The length of the present building, which replaced it after the Great Fire, is approximately still 110 ft., and gives the line of the west side of the cloister. One hundred and ten feet east of this is the line of the eastern side of the passage called Church Entry, giving the eastern side of the square. The northern is sufficiently represented by existing building lines and the southern boundary of the small detached burial-ground of St. Anne, Blackfriars. The southern side of the square is now lost in the modern buildings, but was preserved in the correct position (to complete the 110 ft. square) at the time of Ogilby and Morgan's survey (1677).

[1] *Antiquary*, vol. 24, p. 29.
[2] *Antiquary*, vol. 24, p. 28.
[3] Wills, P. C. C., 1 Horne.
[4] *Ibid.*, p. 30.
[5] Register Fitzjames, fo. 27.
[6] *Letters and Papers, Henry VIII*, vol. v, p. 766 (7).

Unlike the majority of friars' houses, there appears to have been here no building over the cloister alleys,[1] as Losse's survey expressly mentions 'the lead of the whole south cloister', referring to the roof covering, a description which is confirmed and amplified in the Crede. Here the author says: 'Thanne kam I to that cloister and gaped abouten whough it was pilered and peynt and portred well clene. All y-tyled with leed lowe to the stones and y-paved with peynttil iche poynte after other, with kundites of clene tyn, closed all aboute, with lavoures of latun levelyche y-greithed.'

It appears also from the survey that the cloister windows were glazed.

There are records of several burials in the cloister, and the wills of two persons so interred are of considerable interest. Sir Robert Southwell, Kt.[2] (1514), desires to be buried 'in the Cloister of the Friars Preachers in the city of London under or near the Lavatory there nigh to the picture of the holy Crucifix there set'. He continues, 'I will that that friar of the same place, appointed daily for the work to say there the mass of the Trinity, by the space of xx years next after my decease say every day a special collect in his mass for my soul, also de profundis with a pater and ave and crede for my said soul . . . at the said lavatory immediately when the convent of the same place or the most part of them shall go to dinner. Item I will that that friar being a priest that first happen to come any day during the said xx years, in the morning first to the said lavatory to wash his hands and then and there to say de profundis for the souls before said, have for his so doing 1*d.*' He further left 13*s.* 4*d.* yearly to the prior and sub-prior to say 'God have mercy on my soul every day after dinner'.

William Stalworth,[3] citizen and merchant-taylor (1519), directs that his body be buried in the cloister near where his children lie, and adds, 'I will that there shall be destributed to the Friars Preachers every Lent for ten years a barrel of white herrings, and to the young friars of the same house for the same time a frayle of fygges.'

The square of the great cloister was bounded on the east side by the dorter, an apartment on the first floor and built over a number of small chambers, including the chapter-house vestibule, the novices' school-house, and the cellars of the prior's lodging. To the south of the cloister lay the great frater, and on the west side the guest house. These buildings will be described in turn before passing on to the outlying portions of the convent.

[1] This practice obtained very generally in friars' houses all over England. At Hulne (Carmelite) two alleys of the cloister, the east and west, were so constructed, and other examples yet remain standing at Aylesford (Carmelite), Ware and Dunwich (Franciscan), Bristol and Hereford (Dominican).

[2] Wills, P. C. C., 5 Holder.

[3] *Ibid.*, 22 Ayloffe.

THE DORTER.

The dorter is mentioned incidentally in Hugh Losse's survey as consisting of two portions, denominated there the east and south dorters, both being roofed with slate and tile. A further interesting reference is to 'the lead covering of the stairs out of the church to the dorter'. By the east dorter is undoubtedly meant the first-floor apartment of the eastern cloister range, while the south

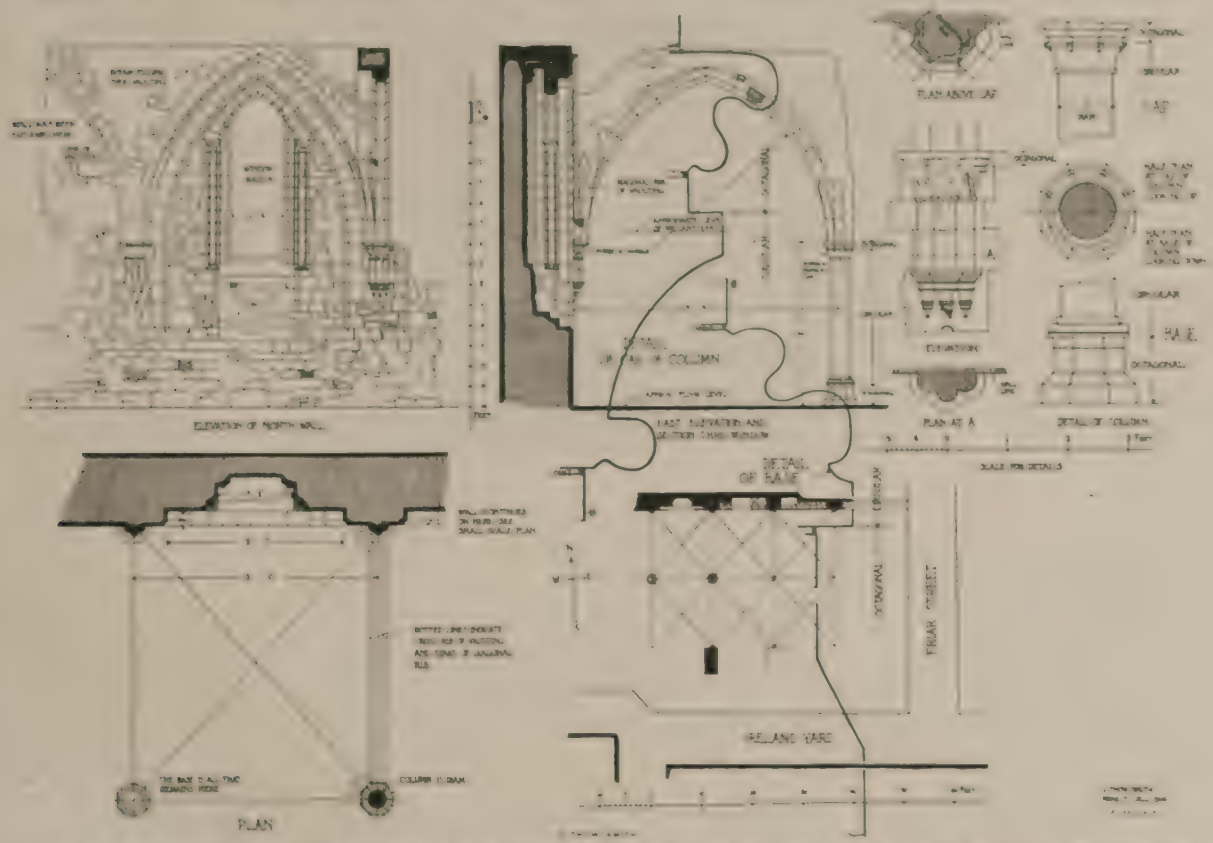

Fig. 1. Blacklittars: Measured drawing of Sub-vault of South Dorter in the Victoria and Albert Museum. Reproduced by permission of the author and the London and Middlesex Archaeological Society.

dorter was probably a building running off at right angles, the remains of the undercroft of which were brought to light in the year 1900 (fig. 1 and plate XIII, fig. 1).

The two dorters were granted piecemeal to a number of persons, rendering it difficult to come to a satisfactory conclusion as to its arrangements. At its northern end towards the church it stood over certain cellars and chambers adjoining the prior's lodging, granted together with a certain 'aula' to Sir Francis Bryan.

Against its southern wall was a stone stair, probably used as the day stair, but also as an approach to the provincial's lodging, which lay to the east. The southern end of the dorter up to the first beam northward was granted to Paul Gresham and Francis Bolders, together with an entry beneath described as 'that entry adjoining the gallery of Lady Anne Grey towards the south containing by

Fig. 2. Blackfriars: Sub-vault of South dorter; vaulting corbel.

estimation 16 ft. in length to the door leading to the cloister, and in width 8 ft., leading to the door in the east side of the Dorter',[1] which would seem to imply that the width of the dorter was sixteen feet.

That a second dorter range ran eastward is proved by mention in the particulars for the grant to Lady M. Kingston, where mention is made of 'the whole of that part of the dorter not assigned or demised to Lady Anne Grey widow, on the North side of the (Inner) Cloister, together with all the buildings and

[1] Augmentation Off., Particulars for Grants 524, dated Sept. 7, 36 Henry VIII. 'Firma totius illius introitus vocati 'le entree' adjacentis et annexati ad 'le gallorye' domine Anne Greye, versus Austrum continentis per estimacionem xvi pedes in longitudine usque ad ostium ducentem ad claustrum et in latitudine, per estimacionem viii pedes ducentis usque ad ostium in orientali parte de le dorter, ac de eodem dormitorio xx pedes in longitudine, ab australi muro usque ad primam trabem versus borialem et sic ducentis usque ad introitum qui ducit ad quandam parvam cameram, vulgariter vocatam 'the provincyalles Chamber' super gardinum. Necnon firma cujusdam camere ruinose vocate 'le comon Jakes Chamber' juxta dictam cameram vocatam 'the provyncyalles chamber' et unius paris gradium vocati 'le payer of Stayers' ducentis per murum lapideum australem dicti dormitorii usque ad dictam cameram vocatam 'the provyncyall Chamber'. Necnon firma trium camerarum, cum duobus caminis in eisdem. Ac etiam unius camere vocate 'le Scolehouse' existentis apud orientalem finem magni claustri. Ac etiam unius parvi gardini existentis ante fenestras ejusdem domus vocate 'le Scolehouse'; insimul dimissorum dicte domine Anne Greye vidue xecutoribus et assignatis.'

houses beneath the Dorter and the whole hall and cellar on the North side of the said (inner) Cloister'.[1]

On the side of the south dorter in 1900 were discovered the remains of a late twelfth-century vaulted undercroft running east and west, of which indications of three bays existed. One column of Purbeck marble remained, together with the rib of the vaulting to the north, which rested on that side on a delicate corbel of the same material, consisting of three shafts with foliated caps carried a short distance down the wall (fig. 2).[2] One arch has been re-erected at Selsdon Park, near Croydon, the column is preserved in the Dominican church, Haverstock Hill, and a fragment of the south wall remains *in situ*.

This building (there called the open vault) is shown on a small plan of the immediate surroundings of St Anne, Blackfriars (*c.* 1670–80), preserved amongst the papers of that parish at the Guildhall (fig. 3). Immediately south of it the roadway is marked Cloister Court, showing that formerly the area, which now goes by that name, extended much farther north. As this 'Cloister Court' almost certainly marks the site of the inner or Infirmary cloister, we have here some guide to the use of the building discovered.

From the Kingston grant quoted above it appears, then, that this building was the hall and cellars lying below that part of the dorter known as the south dorter.

THE PROVINCIAL'S LODGING.

In close connexion with the south dorter was the provincial's lodging. A small chamber known as the provincial's chamber is mentioned as lying on the first floor to the west of the rere-dorter, and consequently between it and the dorter. It seems probable that the hall and cellars on the ground-floor below the dorter, mentioned in Lady Kingston's survey, formed part of the provincial's establishment, although there is no actual proof. The existence of such an establishment is, however, of considerable interest, and may well be compared to the lodgings of the visiting abbot in Cistercian planning.

[1] Rentals and Surveys, Gen. Ser., pt. II, no. 18. Firma totius claustri ibidem vocati 'le Inner Cloyster' modo Gardinum existentis. ~~Ac omnium edificiorum et domorum subtus dormitorium; ac totius aule prompturi et cellarii ex parte boriali dicti claustri.~~ Necnon firma totius domus et edificiorum vocatorum 'le Lybraice' ex parte orientali dicti claustri. ~~Ac totius alius partis dormitorii inde non assignatus~~ (*sic*) ~~nec demitt~~[1] (*sic*) domine Anne Grey vidue, ~~ex parte boriali claustri ibidem.~~ Necnon totius spacii subtus et infra claustrum predictum. Ac etiam totius edificiorum vocatorum 'le fermorye' ad occidentalem finem dicti claustri. Ac totius spacii supra et subtus eidem spectantis. Necnon totius plastrini et domus Brasine dicte 'le fermorye' adjacentium. Ac etiam firma totius stabuli proximum adjacentis dicte domui Brasine, unacum omnibus vis, &c., &c.

[2] See paper by Dr. P. Norman in *London Topographical Soc. Ann. Record*, vol. I, p. 1.

The passage referring to it occurs in the grant to Paul Gresham[1] (36 Henry VIII) 'of a certain ruined chamber called the Common Jakes Chamber

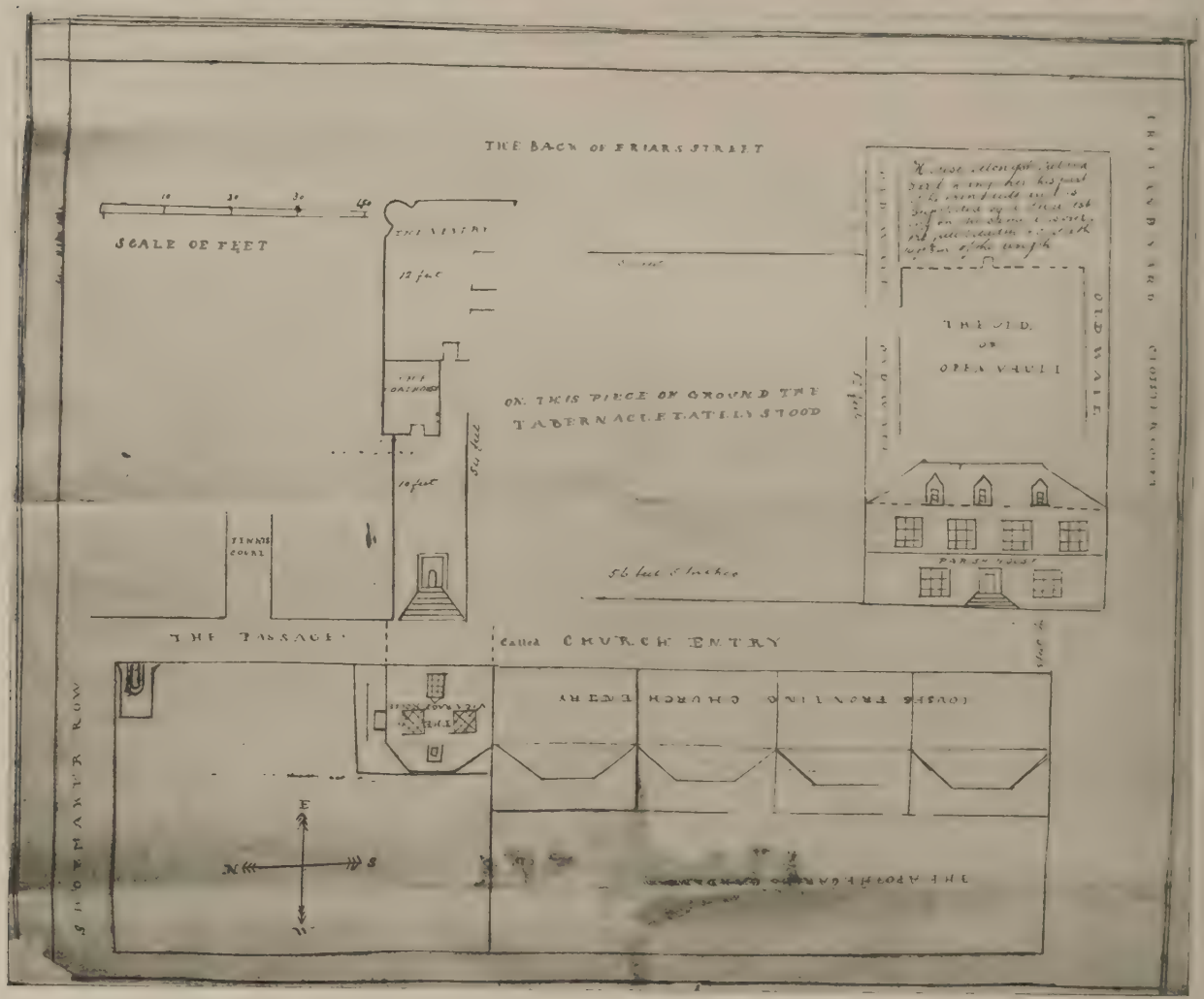

Fig. 3. Blackfriars: Plan of the property of the parish of St. Anne, late seventeenth century. Reproduced, by permission, from a drawing in the Guildhall Library.

next to the chamber called the Provincials Chamber and the pair of stairs leading by the stone wall south of the said dormitory up to the said chamber called the Provincials Chamber'.

[1] See note, p. 70.

THE SCHOOL-HOUSE.

The chamber known as the school-house is described in the same grant[1] as 'One Chamber called the Schoolhouse, standing on the east side of the great Cloister, and also one small garden lying without the windows of the same house called the Schoolhouse, at this time demised to Lady Anne Grey widow'. I would suggest that this school-house was used as the hall of the novices, and that the garden mentioned is the infirmary cloister garden subsequently granted to Lady Mary Kingston.

THE CHAPTER HOUSE.

The chapter house was built from a bequest of Richard de Stratford, a novice of the order, in 1281. It was granted to Sir Thomas Cawarden, and is described in the inquisition taken after his death as the house called the chapter house, lying and being on the east side of the said (great) cloister, 'containeth in length 44 ft. and in breadth 22 ft.'[2] Losse's survey and the patent[3] give the same information, but insert west instead of east, an obvious error.

It appears that in the time of Queen Mary the parishioners of St. Anne, Blackfriars, succeeded in compelling Sir Thomas Cawarden to provide them with a room for a parish church.[4] This building was subsequently rebuilt and enlarged, and was finally destroyed in the Great Fire. Its exact position is fixed by the plan at the Guildhall already referred to, where the ground immediately to the north of the open vault is called the place where the tabernacle stood.[5]

Now the only land that Sir Thomas Cawarden possessed on this side of the cloister that he could possibly have given them was the chapter house. So that the position of the later St. Anne's Church must mark the site of the monastic chapter house. A curiously parallel instance occurs at Creechurch priory by Aldgate, where the chapter house became the church of St. James. One other reference to this building occurs in the grant to Sir Francis Bryan, Kt.

[1] See note, p. 70.

[2] Inq. p. m. 2 Elizabeth, pt. 1, no. 90. Index Lib., *London Inquisitions*, vol. i, p. 191.

[3] *Pat. Rolls*, 4 Edward VI, pt. 6.

[4] Chancery Proceedings printed in the *Athenaeum*, July 17, 1886: 'Inhabitants of the Black Friars *v.* Cawarden, Jan. 1557. The said parish church and churchyard was severed and divided with brick walls from the said parishioners by the officers of the said late king, whereof Sir Thomas Cawarden was one, who declared unto the said parishioners that the said king's pleasure was to have there the said parish church and churchyard amongst other rooms within the said site of the said late house to lay in his majesty's pavillions, tentes, maskes, and revels.'

[5] There is some confusion as to the position of St. Anne's, Blackfriars, several of the late seventeenth-century plans shewing it on the opposite or west side of Church Entry; the plan however, at the Guildhall should be conclusive on this point.

(2 Edward VI),[1] which begins with 'the whole of that our Lower Hall being a part of the Chapter House adjoining the Cloister there on the East side', which appears to be that part of the building below the dormitory. From the description in the Crede it appears the chapter house was richly decorated frescoed walls are referred to, and windows like a great church.

THE INFIRMARY.

The infirmary lay to the south-east of the main cloistral block, and was built round a lesser cloister as at the Blackfriars, Bristol, the Greyfriars, Walsingham, and elsewhere.

The position of the lesser cloister is marked by the still existing Cloister Court, though it formerly covered more ground and extended north as far as Ireland Yard.[2] It is referred to in a will of 1536,[3] when Richard Waleys desires to be buried in the upper cloister of the Blackfriars in the east aisle before the Salutation of Our Lady. It was flanked on the north by the south dorter range, on the west by the infirmary hall, and on the east by the upper and lower libraries. The whole was granted in 1545 to Lady Mary Kingston, the buildings being described as two chambers and a cellar beneath 'le Lybrarye', which formerly was the under library adjoining the Hylle Garden formerly belonging to the Friars Preachers. Also a grant of 'the Cloister, ground and garden called the Inner Cloister Yard and hereditament called the Inner Cloister, lately in the tenure of Sir Wm. Kyngeston and of the said Lady Mary, the house called the Library on the East side of the said Inner Cloister, the house called the Fermory at the western end of the said Inner Cloister, a bake house, a brew house adjoining the said Fermory, and a stable adjoining the said brew house'.[4]

Leland's *Collectanea* gives a short list of twenty-five volumes formerly in the Library here.[5]

THE PRIOR'S LODGING.

The prior's lodging formed a compact group immediately to the south of the choir of the church, the prior's chapel adjoining that building. The substructures of the northern part of the dorter also formed part of the prior's offices. The whole was granted, 2 Edward VI, to Sir Francis Bryan, and is fully described in his grant.[6] The house is there dealt with in two floors.

The upper floor contained the prior's hall, with cellars under, the great chamber at the west end, with kitchen and larder under, and a gallery from it to the

[1] See note 6. [2] See Guildhall plan. [3] *Antiquary*, vol. xxiv, p. 119.
[4] See note 1, p. 71. [5] Leland's *Collectanea*, edit. 1774, vol. iv, p. 51.
[6] *Pat. Rolls*, 2 Edward VI, pt. 7, m. 10. See Appendix III.

chapel adjoining the conventual choir on the south side. Store-rooms, warming chamber, buttery, and other apartments lay beneath the great dorter.

To the prior's lodging belonged two gardens, described as adjacent to the lodging called the priory lodging on the east side, and above the great royal garde-robe, vulgarly called 'the King's great Wardrobe on the West side thereof, containing by estimation one acre of land'. These gardens are of considerable interest, as it was in this neighbourhood that Shakespeare's house in Blackfriars formerly stood.

THE FRATER.

The great frater is nowhere specifically dealt with in the post-suppression grants, and consequently it is only by a process of elimination that the truth as to its position can be arrived at.

That it adjoined the cloister is implied by the terms of Sir Robert Southwell's will already quoted. And the only available site is the normal one on the south. The building on this side at the time of Losse's survey was in the possession of Lady Mary Kingston, and appears to be that referred to in the grant to her (1545) as 'one tenement with a garden adjoining with all its appurtenances late in the tenure of Lady Elizabeth Dentonys'. This must have been a structure of considerable size, as it was valued at 100*s.* a year.

That this building was the common frater of the friars is further implied by a casual reference to the buttery, which adjoined it on the west. Above it, says Losse, is the entry to the frater, and a pair of stairs are also mentioned at this point which probably led up to it, standing as it apparently did upon the first floor. To the west again of the buttery stood the convent kitchen.

The frater apparently extended the full length of the cloister, and must thus have been some 110 ft. long.

THE GUEST HOUSE AND PORTER'S LODGE.

The guest house and porter's lodge adjoined one another, and lay on the western side of the cloister. They passed at the Dissolution into the hands of Sir Thomas Cawarden and Lord Cobham, the latter holding the porter's lodge and leasing the guest house from the former, so that Lord Cobham actually occupied practically the whole of the western range. The 'particulars' for these grants throw some interesting light on the arrangement of the buildings. Lord Cobham's holding is described in the inquisition taken after his death[1] as 'One capital messuage including divers rooms lying under the large room of the said capital mansion sometime called the Porters Lodge of the said Priory'.

[1] Index Library, *London Inquisitions*, vol. i, p. 184.

His grant[1] (37 Henry VIII) is of 'the house, tenement or mansion together with a certain window called the Closet Window looking out into the Church there, with all chambers kitchens larders cellars solars and all other houses and buildings with the Water conduit in the said kitchen, gardens and other places there appertaining to the said Tenement or Mansion', the whole having been formerly in the occupation of Lady Jane Guldeford, and demised to George Lord Cobham by indenture dated April 10, 27th Henry VIII.

The mention of the closet window into the church is of particular interest. It must have occupied the corresponding position to that still existing in the nave at Westminster, and may possibly have been erected by Henry VIII for the convenience of the Emperor Charles V.

It appears that this portion of the domestic buildings had been for some period before the Dissolution let out to lay tenants, and these, with the rest of the western range, were the apartments assigned to the use of the Emperor on the occasion of his visit. This may be proved by the fortunate survival at Loseley Hall of a survey[2] of certain tenements lying on the south side of the lane leading from Blackfriars to Bridewell Bridge, now widened and known as Union Street.

They start with a wooden gallery spanning the Fleet ditch immediately to the south of the bridge, 42 ft. long by 14 ft. wide. Then follow a number of tenements of various lengths fronting the street, but all 14 ft. deep, certainly an extraordinary dimension for a house. The solution is that we have here the remains of Henry VIII's wooden gallery from Bridewell to Blackfriars, cut up into tenements. It followed the southern side of Union Street up to Water Lane, immediately opposite the building we have been describing, thus proving that it was the building occupied by Charles V in 1522, for whose convenience the gallery was built.

The gallery itself was on the first floor, and was originally hung with tapestries and hangings from end to end. About midway along it appears to have opened out into a small chamber 24 ft. square.[3] It is described in Hugh Losse's survey as 'a decayed gallery with void rooms thereunder, wherein old timber and cart wheels lieth'.

The southern half of the western range was granted to Sir Thomas Cawarden in 4 Edward VI. It included 'One old Buttery, an entry or passage, with a gate and stair therein with cellars thereunder, with a hall place at the upper end of the stairs and an entry there to the Frater over the said buttery all which containeth in length ninety-five feet and in breadth thirty-six feet abutting to the

[1] Aug. Office Partics. for Grants, Henry VIII, no. 293.
[2] Printed in full in Besant's *Survey of London*, vol. ii, Appendix ix.
[3] The projection of this chamber is still preserved in the modern building line.

cloister on the east, the kitchen on the west side, to Lord Cobham's house on the north side; and on the south side to a blind parlour that my lord Warden did claim. One kitchen yard and an old kitchen, an entry or passage wending to the same containing in length eighty-four feet abutting to the lane aforesaid on the west side being in breadth at that end seventy-four feet, abutting to Mr. Portinary's parlour next the lane on the south side and the Lord Cobham's brick wall and garden on the north side'.

All these buildings were apparently leased to Lord Cobham, and in 38 Henry VIII occurs an acknowledgement by William Morgan that he had received on behalf of Sir T. Cawarden £36 3s. 4d.[1] rent for the rooms from Lord Cobham, including a certain hall next adjoining to the great hall (frater), together with one kitchen called the convent kitchen, two houses called two larders with a piece of vacant land adjoining the said kitchen on the west, together with one gallery containing in length 40 ft. and in width 10 ft., lying on the east side of the said kitchen, and also a pair of stairs leading from the said kitchen to the great cloister.

The great hall mentioned is probably the great frater, and the convent kitchen adjoined it at the west end with two larders interposed. The gallery is apparently that portion of the west cloister alley which adjoined the buildings in question.

The whole of this block, with the exception of the buttery and kitchen, passed (under the name of Lord Cobham's house) into the possession of the Apothecaries' Company in 1632,[2] and the hall place mentioned became their hall. The present structure, rebuilt after the Great Fire, occupies the same position, and now measures 59 ft. by 29 ft. within the walls.

The width agrees admirably with that of the survey (36 ft.), allowing 3 ft. 6 in. for the side walls, and there can be no doubt that the Apothecaries' Hall represents exactly in dimensions and position the building in which Charles V was entertained.

It appears likely that in monastic times the whole of this block formed the superior guest house. It occupied a position analogous to that of a similar building still standing at the Franciscan priory at Ware.

THE CHURCH OF ST. ANNE.

The status of the chapel, afterwards known as St. Anne, Blackfriars, before the Dissolution is a little difficult to determine. It can hardly have been an ordinary parish church, as no reference to it has been discovered in mediaeval

[1] *Hist. MSS. Commission*, 7th Report, p. 603.
[2] C. R. B. Barrett, *History of the Society of Apothecaries*.

times. On the other hand, a bill of complaint from the parishioners in the time of Queen Mary I distinctly states that Henry VIII's commissioners admitted the existence of a parish of St. Anne, and they state that the prior of the house 'did continually find and maintain at his own proper costes and charges a sufficient curate to serve the said parishioners in the parish church aforesaid'.[1] These parishioners can only have been the persons leasing houses from the convent, and it seems unlikely that this was the one monastic precinct in London which provided its tenants with a parish church.

The further contention that they had a parish churchyard is in no instance borne out by the evidence of wills.

It is possible that the chapel of St. Anne was simply a guest-house chapel, and that the large number of residents within the precinct gave it something of the appearance of a parish church.

The position of this building can be ascertained with more or less certainty. It is referred to in the bill of complaint above mentioned as being used to store the king's tents, pavilions, masks, and revels. A passage in Losse's survey fixes its site. In describing the position of the 'upper frater', he says it was bounded on the north by a hall 'where the King's revels lieth at this present', evidently the former chapel of St. Anne. The ground is now occupied by *The Times* printing house, previous to which it was the King's printing house, and earlier still the Pipe office, which it seems to have become immediately after the removal of the revels. Portions of the building have from time to time come to light. One is described in the *Builder*, of January 5, 1856, as a buttress projecting 4 ft. 5 in. from the face of the wall, with a chamfered plinth resting on a mass of ragstone and chalk 6 ft. high. On the rebuilding of *The Times* office in 1872 a large portion of walling was discovered, of which a general view exists at the Guildhall Museum (Pl. XIII, fig. 2). It shows four bays divided by buttresses, with two doorways and two buttresses at the angle. There is unfortunately no record of the precise position of this wall or any particulars of its dimensions.

THE 'UPPER FRATER'.

The only buildings now remaining to be noticed formed a block of considerable size lying to the south-west of the cloister, and quite separate from the ranges flanking it. The main structure of the group was a building of such unusual size and obscure designation that it will be necessary to consider it at some length. Hugh Losse describes it as 'One house called the upper frater containeth in length 107 feet by 52 feet, abutting south and east to the Lady Kingston's house and garden, north to a hall where the King's revels lieth at this

[1] See *Athenaeum*, July 17, 1886.

Fig. 1. Blackfriars: Sub-vault of the South doctor looking north, discovered in 1910

Fig. 2. Blackfriars: Remains of the chapel of St. Anne, excavated in 1775
Reproduced by permission from a painting in the Guildhall Museum

Published by the Society of Antiquaries of London 1912

present and west toward the Duchy chamber and Mr. Portinary's house. A void room being an entry towards the little kitchen and a coal house containing in length 30 ft. and in breadth 17 feet. One chamber called the Duchy chamber, with a dark lodging thereunder containing in length 50 feet and in breadth 16 ft., abutting against the north end of the said frater and abutting west upon Mr. Portinary's parlour.'

The mention of Mr. Portinary's parlour fixes the position of the whole block, and shows that the Duchy chamber flanked the kitchen yard (mentioned above) on the south side, for the same parlour is mentioned as the southern boundary of the yard.

Setting it out on these lines we find that the eastern wall of the upper frater must have been the western building line of Printing House Square, while its southern end is represented approximately by Huish Court.

A second description of this building is to be found in a rather unexpected quarter. In 1597 Sir William More, of Loseley, as executor to Sir T. Cawarden, sold to James Burbidge a certain great building with yards and subsidiary structures adjoining, of which the description in the deed of sale leaves no doubt that it was the upper frater and its adjoining buildings of the earlier survey.[1] If any further proof were needed beyond the similarity in description it is found in the fact that the upper frater is the only available building once belonging to Sir Thomas Cawarden that his executor could have sold. The description in the deed is too lengthy and involved to be quoted in full, but it describes a building three stories high, the top floor being formerly one great room with staircases leading up to it, bounded on the north by the Pipe office and its yard (formerly the kitchen yard). This was the structure that James Burbidge transformed into the celebrated Blackfriars Theatre, and a document recently discovered by Dr. Wallace gives its internal dimensions as 66 ft. by 46 ft.[2] It will be at once seen that the width 46 ft. internal agrees admirably with the external width of the upper frater, 52 ft., allowing some 3 ft. for each side wall. The difference in length is accounted for by the fact that Burbidge did not make use of the whole building, but divided off the northern part into ante-rooms and apartments for the children of the chapel, &c., leaving 66 ft. out of 107 ft. for the theatre itself.[3]

With regard to the monastic use of this building it was obviously not the common frater of the friars, which here flanked the cloister. There is, however,

[1] Printed in full in Halliwell-Phillipps's *Outlines of the Life of Shakespeare*, vol. ii, p. 295.

[2] Dr. Wallace, *The Children of the Chapel at Blackfriars*, p. 39.

[3] A drawing in the Gardner Collection, supposed to represent the front of the theatre, is reproduced in G. P. Baker's *The Development of Shakespeare as a Dramatist*. It indicates a classic building with an open colonnaded portico, but the ascription is doubtful.

one mediaeval building, of the existence of which there is documentary evidence —'the Parliament Chamber'—which in all probability is the structure in question. It was the great apartment used for the sittings of two parliaments of Henry VIII, and which also witnessed the trial for the divorce of Catherine of Arragon and Henry VIII before Cardinals Campeggio and Wolsey.

The writ of summons for this trial describes it as the 'Parliament Chamber near the Friars Preachers'. The fact that this name is used is sufficient proof that the great frater of the priory is not referred to, while the term 'near' implies that it was not one of the main block of the priory buildings grouped round the cloister, but lay somewhere within the precinct.

The upper frater will be found to satisfy all the conditions required. It was the largest hall in the precinct, and a large apartment would be essential both for the ceremonial of the trial and for the sittings of Parliament. Secondly, it was situated on the outskirts of the priory buildings, suiting admirably the description. Thirdly, there is no record of the existence of any other hall of sufficient dimensions in a similar situation; and lastly, the small structure adjoining it was called the Duchy chamber, which argues an official use at some time of these apartments.

All things considered, then, there is every likelihood of the identity of the 'Parliament Chamber' with the house called the upper frater and the Blackfriars Theatre of later times, and we may conclude that when Shakespeare's *Henry VIII* was played at Blackfriars the celebrated trial scene was acted within the actual walls that witnessed the real drama that ruined the fortunes of the great cardinal and put an unhappy termination to Queen Catherine's married life.

APPENDIX I

HUGH LOSSE'S SURVEY

Printed in the *Gentleman's Magazine*, 1843, Part ii, pp. 134-5.

A Survey taken by me Hugh Losse, Esquire, the King's Majesty's surveyor . . . . . of the site and soil of the late church of the late Blackfriars, within the city of London, as also of the churchyard, cloister, lead tile, slates, timber, stone, iron, and glass, with certain alleys, edifications and buildings thereunto belonging, the 4th day of January anno 4to Regis Edwardi Sexti [A.D. 1551], by virtue of a warrant from the right worshipful Sir Richard Sackefield, Knight, Chancellor of the King's Majesty's Court of the augmentations and revenues of the same as hereafter ensueth.

The site or soil of the said late church called the Blackfriars within the city of London with the two aisles, chancel and chapel to the same belonging, containing in breadth from the north churchyard to the south cloister 66 ft. and in length from the lodging of John Barnet, Gent. on the west end of the same church to the garden belonging to the mansion or tenement belonging to Sir Anthony Ager Knt. on the east end of the same church 220 ft. The churchyard on the north side of the body of the same church, containeth in breadth from the said church unto a certain brick wall, the houses, tenements and gardens in the tenure of Peter Hesiar and Mr. Holte on the north side of the said churchyard 90 ft. and in length from the houses and tenements of Mistress Partridge, Mr. Southcote and the Anker's House on the west end unto a certain wall adjoining to the King's highway on the east end 200 ft. The soil of the cloister, being on the south side of the body of the said church, containeth in breadth from the body of the said church to the lodging of Lady Kingston on the south side of the same cloister 110 ft. and in length from the wall belonging to the lodging sometime Sir Francis Braye's [Bryan's] and now Sir Anthony Ager's Knight and Mr. Walsingham's on the east part to the lodging of Lord Cobham or John Barnet on the west part 110 ft. The chapter house being on the west [s.] end the said cloister containeth in length 44 ft. and in breadth 22 ft. which all the said soil or ground is valued in the whole to be worth by the year 8*l*. The stones of the arches of the body of the said church, with the windows, walls, buttresses and towers of the same church and the stones of the quire and of one chapel over the north side of the said church and also the paving and freestone of the south cloister, valued in the whole at 66*l*. 6*s*. 8*d*. The slates and tiles of the east dorter and of the south dorter, with the tiles that covereth the roof of a chamber now in the tenure of Sir Thomas Cawrden, over the old kitchen in the south end of the Lord Cobham's lodging, valued in the whole at 11*l*. The glass of the same church, as well within the body of the said church as also within the quire, chapel and cloister, valued in the whole at 48*l*. The contents of the whole lead of the body of the church, of the two aisles, of the lead of the roof of the vestry, the lead covering of the stairs out of the church to the dorter, the lead of the whole south cloister and a cistern of lead in the old kitchen containing 112 fothers dim. The whole contents of the lead covering the frater, parcel of the said friars, and the lead covering of a shed, adjoining to the said frater, amounteth to 16 fothers dim. every fother of the said lead valued and rated at 110*s*. amounteth in the whole to 69*l*. 10*s*. The rent or ferme of a certain tenement, within the precinct of the said late Black Friars, called the Anker's House, late in the tenure of Sir Morris Griffith clerk, Archdeacon of Rochester and renteth yearly 40*s*. The rent or ferme of a little tenement within the precinct of the late Black Friars situate and being against the tenement of Sir Thos. Cheynye Kt. and Ld. Warden of the Cinque Ports, in the tenure of Sir Robert Kyrkham Kt. and renteth yearly 20*s*.

One void ground with a decayed gateway [rather gallery] therein with void rooms thereunder, wherein old timber and cart wheels lieth, containing in length 98 ft. abutting against Bridewell ditch on the west side, being in breadth at that end 74 ft.; abutting to the common highway and lane, that guideth to the common stairs to the Thames side, on the east side, being in breadth at that end 94 ft.; abutting to Mr. Harper's garden and also Frances . . . . . garden at the north side and to Sir Christopher More's garden on the south side. One kitchen yard and old kitchen, an entry for passage wending to the same, containing in length 84 ft. abutting to the lane aforesaid on the west side being in breadth at that end 74 ft. abutting to Mr. Portinary's parlour, next the lane, on the south side and to the Lord Cobham's brick wall and garden on the north side. One old buttery and an entry or passage, with a gate and stair therein, with cellars thereunder, with a hall place at the upper end of the stairs and an entry there to the frater, over the same buttery, all which containeth in length 95 ft. and in breadth 36 ft. abutting to the cloister on the east side, the kitchen on the west side, to the Lord Cobham's house on the north side, and on the south side to a blind parlour that my lord Warden did claim. One house called the upper frater containeth in length 107 ft. and in breadth 52 ft., abutting south and east to the Lady Kingston's house and garden, north to a hall where the King's revels lieth at this present and west toward the duchy chamber and Mr. Portinary's house. A void room being an entry toward the little kitchen and coal house containing in length 30 ft. and in breadth 17 ft. One chamber called the Duchy chamber, with a dark lodging thereunder containing in length 50 ft. and in breadth 16 ft., abutting against the north end of the said frater and abutting west upon Mr. Portinary's parlour. All of which premises are valued to be worth by the year 66*l.* 8*s.*

APPENDIX II

LIST OF BURIALS

(MSS. Harleian. Plutarch. 6033)

The Bodyes buryed in the Black Fryers of London founded by King Edward the first & queen Alionor his wife.

First Margarett daughter of the Kinge of Scottes lyeth in the left pte of the quire.
And at the head of the aforesaid laydy lyeth the Lord Hubert de Burgo Earle of Kent.
And by him lyeth Robert de Attrebato Earle of Bellamont
In the wall in the third Arch lyeth Dame Isabell wife of S^{r} Roger Bigott Earle marshall
And by her lyeth Willm & dame Jane Huse children of dame Elisabe. countess of Arundell.
And by them lyeth Dame Elis daughter of the Earle of Warren & after countess of Arundell.
In the fourth arche lyeth dame Ida wife of Sir Walter . . . . daughter of the . . . . Ferrers of Charteslaye
At the head in the wall lyeth Richard de Brews.
Item by the Laydy lyeth Dame Joan daughter of Thomas . . . . wife to S^{r} Guydon Ferrers. And at her right hand lyeth Guydon Ferrers
And by the right hand of Guydon lieth Dame Joan Huntingfeild
Itm. S^{r} John Molyne knight.
And by him lyeth Richard Straunge sonne of Roger.
Itm. Elizabeth daughter of S^{r} Bartholmew Badelsmere wife of Willm Bohun Earle of Northampton, mother of therle of Marche & Harford and Elisabeth Countesse of Arundell.

Itm. Dame Elizabeths head lyeth to Dame Joan daughter of S^r^ John Carne first wife to S^r^ Guydon Bryan.
And Hugh Clare knight lyeth by her right syde.
Itm. the hart of Queen Alyonor founder.
Itm. the hart of Alphons her sonne
Itm the hart of John and Margarett children of Willm̃ Valence.
Itm the daughter of S^r^ Geffrey Lucy wife of S^r^ Thoms Peverell
S^r^ Willm̃ Thorpe Justice.
And in the quire lyeth the Lord Hoth of Ireland.
Dame Mawde wife of Sir Jeffray Say, daughter of the Earle of | Warw and with her Edmund a kynn to the kinge | And by her lyeth Dame Sibill daughter of Willm Pateshull wife of Roger | Beuchamp | Itm. Dame Jane Boteler | Itm. the lord Scroope Upsall | Itm. Sir .... Fanhope and Dame Elizabeth his wife daughter of | the duke of Lancaster | Itm the hart of S^r^ ..... Westye | Itm the hart of Dame Margery Countesse of the Yle | Itm S^r^ Stephen Collmeon knight. | Itm M^r^ Jame of Spayne | Itm. S^r^ Willm̃ Peter knight | .... Caueston wtout a stone | Itm Maister Talbott esq. | Itm S^r^ John Tiptoft, Earle of Worcester. | Itm Willm̃ Paston and Anne daughter of Edmund of Lancaster | Itm. the lord Fearmount | Itm. M^r^ Goch | S^r^ Edmnd Cornwell, Baron of Burford | The Lady Nevill wedded to the L. Douglas, daughter of the duke of Exeter | Richard Scroope Esq^re^ | Itm Conan Aske | Robert Ingleton | .... Croke gent | Itm. .... Waterton | John Kingesfeild | Dame Katherne Vaulx | Alice Cobham | S^r^ Thomas Browne and dame Elianor his wife | S^r^ George Browne and dame Elisabeth his wife | Jane Pawell | Dame Jane Inglethorpe | Willm̃ Morin Esq. | Thomas Wydwell Esq. | Sir John Merston and dame Rose his wife | Margaret wife of Lewis fitz lewys | .... Rodynton | .... Moresbye | Thomas Wesenham de Connigton | Robte. Greworke | ..... Beamount | Thomas Swynford | Thomas Brampton | John Delabere | S^r^ Geffrey Cromewell | .... Lady Burford | Edmund Biglesworth | Edmund Talbott | .... Cockston | .... Offema | Willm̃ Lasingbye and Agnes his wife | Margarett wife of Alain Rose | Will^m^ Soincotte Esq | John Marsley Esq. | Raphe Rochefford Esq | John Ryse Esq | Robert Wellys Esq. | Nicolas Chen Esq. | Willm Windsor Esq | Robert Lytton Esq | .... Byshton Esq | .... Brankole | John Terington esq., Thomas Swaston esq., Nicholas Carrew esq., ... Staunton esq., John Leynton esq., Geffrey Springe esq., ... Righlye esq., Willm Toten esq., Willm Clifford, Robert Poynter, Thomas Roger, Henry Ashebourne.

APPENDIX III

EXTRACT FROM THE GRANT TO SIR FRANCIS BRIAN, KT.

Patent Roll 2 Edward VI, pt. 7, m. 9.

Totam illam aulam nostram desubtus, infra precinctum ....., parcellam domus Capitularis ibidem ac adjungentem Claustro ibidem, ex parte orientali; ac totum illum scitum nostrum illius hospicii parcellam dicte domus nuper nuncupate 'le Prior's lodgynge' ibidem, modo in tentura sive occupatione dicti Francisci [Brian]. Necnon totam illam cameram nostram subtus 'le Dorter' dicte nuper domus, adjacentem usque ad dictum Claustrum, ex orientali parte predicta; ac totam aliam Cameram nostram ibidem et particionem pro Cellario vocatam 'a Buttrey' adjacentem eidem Claustro; ac totam illam domum nostram ibidem vocatum 'a Storehouse' subtus le dorter predictum ibidem, adjacentem usque ad cellarium vocatum

'le Buttrey' ibidem ex boriali parte; ac totam illam domum nostram ibidem pro focali adjacentem eidem domui vocatam 'the Storehouse'. Necnon totam illam Coquinam nostram ibidem cum quodam curtilagio adjacenti usque 'le Storehouse' ibidem ex orientali parte; ac etiam totam illam domum nostram ibidem vocatam 'a larder house' adjacentem usque ad Coquinam ibidem, ex boriali parte; ac totum illud Cellarium nostrum ibidem adjacentem usque ad dictam domum vocatam 'the Larder house' et coquinam ibidem, ex orientali parte; ac totam illam parvam Cameram nostram ibidem adjacentem usque ad ecclesiam de 'le Blackefriers' predictorum, ex australi parte ibidem; ac totam illam Capellam nostram ibidem adjacentem usque ad ecclesiam dictam nuper domus fratrum predicatorum ibidem, ex parte australi; ac totum illud Cenaculum nostrum ibidem vocatum 'a Parler', subtus domum et edificium vocatum 'le Gallerey' ibidem adjacentem ad dictam Capellam, ex australi parte predicta; ac totam illam magnam Cameram nostram vocatam 'a greate dyninge chamber' super cellarium ibidem; ac etiam totam illam Cameram nostram ibidem vocatam 'a bedde Chambre' cum parva camera super eandem et adjacente usque ad dictam magnam cameram ibidem ex boriali parte; ac totam illam aliam Cameram ibidem adjacentem super finem occidentalem dicte magne Camerae, vocate 'the greate Chambre'; ac totum illud edificium et domum nostram vocatam 'le gallerye', super Cenaculum ibidem, adjacentem usque finem orientalem dicte Camere, vocate 'the Greate Chambre'; Ac etiam totam illam domum et edificium nostrum, vocatum 'le lytle Gallerie' ibidem, cum duabus parvis Cameris, super eandem, adjacentem usque ad dictam magnam Cameram, ex australi parte predicta; ac totam illam Cameram nostram super Aulam predictam ibidem, cum diversis particionibus, infra eandem adjacentem usque ad dictam parvam galeriam, ex australi parte predicta; ac etiam illa duo gardina nostra ibidem adjacentia usque ad dictum hospicium vocatum 'le Priour's Lodgynge', ex orientali parte et super magnam Garderobam regiam ibidem vulgariter vocatam 'the Kynges greate Wardrobe', ex occidentali parte, continentia per estimacionem unam acram terre.

HASTINGS CHANTRY CHAPEL: PANEL I. ST. STEPHEN PREACHING

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V.—*The Ancient Paintings in the Hastings and Oxenbridge Chantry Chapels, in St. George's Chapel, Windsor Castle.* *By* W. H. St. John Hope, *Esq., M.A., and* P. H. Newman, *Esq., F.S.A.*

Read 14th March, 1912.

I. The Chantry Chapels: *By* W. H. St. John Hope, *Esq.*

The great chapel of Saint George within the royal Castle of Windsor, founded by King Edward IV for the most honourable and noble Order of the Garter, stands immediately to the west of the original chapel of the Order, formed by King Edward III within the older building of King Henry III.

The new chapel was formally begun by the appointment, by letters patent of 10th February, 1472–3, of Richard Beauchamp, bishop of Salisbury, as master and surveyor of the works, but it was not until 12th June, 1475, that further letters patent were issued empowering the bishop to clear the site for it.

The actual building was begun, at the east end, in 1477, and the quire was sufficiently advanced by 1480 to receive its wooden roof. 'Vowtyng stone' was also bought the same year for parts of the aisle vaults, but these were not completed until the reign of King Henry VII. The contract for the quire vault was made in 1506.

The stall-work for the new quire was begun, apparently in London, at the same time as the building, and part of it was set up in 1480. The remainder was all in place, at any rate as regards the canopied stalls, and of course the panelling behind them, in 1483.

In April of that year King Edward IV died, and was buried in the new quire, in the place of honour as founder, under the first arch immediately north of the high altar. The first and second bays of the aisle behind were to serve as a chapel, and upon the vault above was to be a second chapel or closet, with an altar and the King's tomb, with his effigy of silver-gilt, or at the least of copper and gilt.

The arch in the third bay of the aisle originally contained the upper entrance into the quire; and under the fourth arch was, and is, the chantry chapel of William lord Hastings, which brings us more nearly to the subject of this paper.

The chapel fills up all the space under the arch, and consists on three sides of an enterclose of stone, built up against the wooden enterclose at the back of the quire stalls, which thus forms the fourth or south side. It is about 12 ft. long, and $15\frac{1}{2}$ ft. high externally, and of three bays across the north front. The chapel stands upon a marble step, and has a moulded plinth and panelled base, above which is a row of traceried window openings grated with iron. These windows consist of two tiers of three cinquefoiled lights with battled transoms, surmounted by crocketed ogee canopies springing from clustered buttresses between the bays. Similar buttresses are placed at the outer corners. The canopies run up through a range of twelve small housings for images, four in each bay, and there are other housings for eight taller images at the outer corners of the chapel. The whole is finished off with a simple cornice and cresting, having in the middle a finely carved atchievement of Lord Hastings's arms with his mantled helm and crest, a black bull's head encircled by a rich crown. In the third or westernmost bay is a four-centred doorway with carved spandrels. The door, like all those in St. George's chapel, has solid panels in the lower half and traceried openings above, filled with wide iron gratings.

The interior of the chapel has a floor area of $8\frac{1}{2}$ ft. by 5 ft., nearly all of which is taken up by a large but plain grave-slab of Purbeck marble. The east wall has plain ashlaring for a height of 6 ft., with traces of an altar 3 ft. $4\frac{1}{2}$ in. high above the floor, and lead plugs for fixing a *tabula* or reredos. Over this is a frieze of five angels, beautifully carved, clothed in feathers and wearing jewelled diadems; they hold between them shields carved with the arms of Lord Hastings, *silver a maunch sable*. From a cresting above the angels rise one larger and two lesser canopied niches with stools for images, flanked by two narrower niches. The west wall is similarly treated, but its ashlared lower half bears traces of having been painted with a rich baudekin pattern. The angels of the frieze also hold shields of the Hastings arms, and over them are two larger and two lesser niches for images. The north side has plain ashlar below the windows, but all its flat surfaces were decorated with painting, and with stamped figures in gesso of the Hastings maunch and bull's head.[1] The chapel is covered with a lierne vault with the field painted blue, and most of the stonework is now painted white.

The south side, as already noted, is formed by the enterclose at the back of the quire stalls. This is plain for a height of 6 ft., and is there surmounted by a battled parapet. Above this the enterclose is divided by buttresses into panelled compartments corresponding to those forming the backs of the stall

[1] These have been systematically destroyed, but two maunches and a bull's head are left on the wall immediately south of the niches over the altar.

HASTINGS CHANTRY CHAPEL. PANEL II. ST. STEPHEN BEFORE HEROD

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canopies, but the buttresses have been altered to bring their height within the chapel, and at the base of each is a shield of the Hastings arms.

The three panels, and part of a fourth, which are enclosed by the chapel, are decorated with a series of contemporary paintings of the story and passion of St. Stephen, with explanatory texts beneath, but before describing these a few words must be said as to the date of the chapel.

William lord Hastings was an ardent Yorkist. His father, Sir Leonard Hastings of Kirby, died in 1455, and his son was sheriff of Warwickshire and Leicestershire the following year, when he was only about twenty-six years old. On the accession of King Edward IV in 1461 he acquired the castle, barony, and honour of Hastings, and was made Baron Hastings of Hastings. In 1462 he was elected Knight of the Garter. From 1461 till the King's death in 1483 he was chamberlain of the household, and in high favour with his sovereign. On the 27th June, 1481, Lord Hastings made his will, which contains the following instructions as to his burial:

> And forasmoche as the Kyng of his abundant grace for the trew service that I have doon, and at the leest entended to have doon to his grace, hath willed and offred me to be buryed in the Church or Chapel of Seynt George at Wyndesore, in a place by his grace assigned in the which College his highness is disposed to be buryed: I therefore bequeth my simple body to be buryed in the sayd Chapell and College in the said place, and woll that there be ordeigned a tumbe convenient for me by myne executors; and for the costs of the same I bequeth c marks.

After bequeathing to the dean and canons of Windsor a jewel of gold or silver of the value of £20 for a memorial of him, he continues:

> Also I woll that my feoffees by the oversight of myne executors gif and amortize lands to the yearly value of xx. li. over all charges to the Dean and Chanons aforesayd, and to their successors, to the intent that they shall perpetually fynde a preste to say daily masse and divine service at the awter next to the place where my body shall be buryed in the sayd Chapell or College.

As is well known, William lord Hastings was peremptorily beheaded without trial by order of Richard duke of Gloucester on 13th June, 1483, and he was buried at Windsor in the place he had appointed.

The foundation of his chantry did not take effect until twenty years after his death. An indenture was then made on 21st February, 18 Henry VII (1502-3), between Katherine, late wife and executrix of William lord Hastings, on the one part, and Sir Edward Hastings, lord Hastings and Hungerford, his son, and Christopher Urswick the dean, and the canons of Windsor on the other part, founding a chantry for one priest 'to sey daily his divine service when he is disposed to sey masse at thautre within the chapelle wherein the body of

the seid late Lord lyeth buried in the seid churche.' The deed provides that the dean and canons shall keep and maintain all the necessary ornaments. 'And over that the seid Deane and Chanons and their successours shal kepe mainteyn and susteyne for ever a chaumbre with a chymney and a draught in the same which is bilded and edified by the said Lord Hastinges and Dame Kathyrine called the Lord Hastings Chauntery prestes chaumbre within the seid free chapell and college for the said Chauntrey prest and his successours to lye in..... and the same chaumbre to be called the Lord Hastinges Chauntrey Prestis Chaumbre.'

Concerning this structure Ashmole writes: 'On the North side of St. *Georges Chappel* stands a little house, built for the habitation of this Chantry Priest, having over the Door (cut in stone) the Lord *Hastings's Arms*, surrounded *with a Garter*.'[1]

Now the chapel in which Lord Hastings is buried cannot be older than the wooden enterclose against which it is built. An account roll of the works of St. George's chapel for the period 11th January, 1480-1 to the same day in 1481–2 shows that the setting up of the entercloses on both sides of the quire was completed in that interval, but the enterclose on one side seems to have been ready the year before. This was most likely the north, since the King's chapel, etc., were on that side.

Now in Lord Hastings's will, made in June, 1481, mention is made of 'the awter next to the place where my body shall be buryed'. This place had already been assigned him by King Edward, and the wording implies that the altar had been already set up. It is conceivable therefore that Lord Hastings drew up the directions as to his burial-place because he had just set up about it his chantry chapel. It is true that he makes no mention of it, but the foundation deed of his chantry refers to the house for the chantry priest 'bilded and edified by the said Lord Hastinges and Dame Kathyrine' his wife, and if he had built the house why should he not have built the chapel in which the priest was to minister? There is nothing either in the architecture of the chapel or its decoration to indicate a later date, and the costumes in the St. Stephen pictures are certainly not after 1485. The chapel might of course have been built immediately after Lord Hastings's death by his widow and son, but that is hardly likely to have happened under the rule of the same Richard who had ordered his death.

In the account of the treasurer of the College for 1498-9[2] are payments, 'Johanni Freman carpentario pro factura unius Schaffold pro ly peynting Armorum domini de hastynges per diem vj^{d}. Et solut. Nicholao Deryk pro ly peynting Armorum domini de Hastynges ex mandato magistri decani xiij.s. iiij^{d}.'

[1] p. 150. [2] Roll xv. 34. 71.

HASTINGS CHANTRY CHAPEL: PANEL III. MARTYRDOM OF ST. STEPHEN

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This entry may refer to the painting of the arms over the chantry priest's house, or of the atchievement surmounting the chantry chapel, but a third and most likely alternative is that it refers to the painting of the broad key or boss of the aisle vault immediately in front of the Hastings chapel. This is carved with an angel holding a shield of the arms of Hastings, and four small shields of the same arms within the Garter alternate with the carved ornaments round it

In the south aisle of the quire is another chapel, of similar construction, size, and appearance to that of Lord Hastings, from which it was obviously copied, but differing from it in a few minor details.

This is the chantry chapel of master John Oxenbridge, who became canon of Windsor in 1509, and died in 1522. His chapel for some obscure reason does not stand opposite to that of Lord Hastings, but is placed in the next bay westward. It has over the windows shields of the arms of Saint George and of Oxenbridge (*silver a lion rampant gules and a border vert*). The cornice has an ornamental cresting with figures corbelled out from the corners, of angels holding shields of St. Edward and St. George, and in the middle are the royal arms and supporters of King Henry VII with a rich crown above. The spandrels of the doorway are carved with an ox accompanied by the letter и, and with a bridge, in both cases with trees behind, forming a rebus on the name OXENBRIDGE. The interior arrangements closely resemble those of the Hastings chapel, but the shields borne by the angels are blank, and the carving is decidedly inferior.

II. The Paintings: *By* P. H. Newman, *Esq.*

It is with considerable diffidence that I approach the description I have to give of the two pictures, and premise that it is rather with the hope that their presentment may elicit from fellows of the Society of Antiquaries that information upon so interesting a subject which is necessarily desired, than with any idea of saying the last word upon it myself.

Having been requested by the dean and chapter of Windsor to examine and report upon these paintings (indications of decay being manifested in both instances, to which I shall refer later), I saw them for the first time about five years ago. They occupy the back wall of the chapels, in the case of the Hastings chapel for its entire length, and in the Oxenbridge chapel for about five-sixths of its length. The base of each picture is about six feet from the floor, and compactly framed into, and apparently forming part and parcel of, the backs of the stalls of the Knights of the Garter, *de facto* the quire stalls of St. George's chapel. Each painting is about four feet in height, and extends to the vaulting of the chapels already described by Mr. Hope.

The subjects depicted in the Hastings chapel are incidents in the life and

death of St. Stephen, while the picture in the Oxenbridge chapel illustrates incidents in the life and death of St. John the Baptist. The incidents in each case are separated by rather ornamental pinnacled buttresses, really the framework of the stalls, the subjects in the life of St. Stephen being divided into four panels, while those of St. John the Baptist occupy only three, the end division on the left hand in this instance being unpainted. Opinion is divided as to it ever being comprised in the picture; it should be noted, moreover, that architectural fitness has been entirely disregarded in respect to the paintings and the roofs of the chapels, as in no case do the pendentives of the vaulting align or coincide with the buttresses or framework of the panels, leading to the inference that painting in the present position had not been originally contemplated.

I have said that there are no means of proving that these pictures are painted on the actual entercloses of the stalls or not without removal, but as removal would further injure the works, already damaged by damp, heat, and the piercing of nails and screws attaching the armorial stall-plates to the backs of the stalls, one must rely upon observation of the painted surfaces. I find that the panels, in the Oxenbridge painting certainly, have been cut to fit the vaulting, and that there is a space beyond the thickness of the panels themselves, since a pointed implement put into a hole can touch the back of a stall-plate. I must apologize to the Society for going into these structural details so particularly, but it is necessary, it will be found, not only in considering the actual position of the pictures, but also in regard to their attribution or origin. It is now agreed, I think, that the paintings are on panels, but separated by an intervening space from the actual backs of the stalls.

Now as to attribution or origin. It has been suggested to me, and is I gather a matter of belief, that the works were painted *in situ*, and with this assumption diligent search has been made through records at Windsor Castle, to endeavour to trace, by payments made, who painted the pictures. I am told that no record whatever exists in the royal archives throwing any light upon the subject whatever. Nevertheless, the painting *in situ* theory was so firmly believed in that I gave time to the search for name or charges at the Record Office. Moreover, not trusting to myself in the matter of deciphering the writing of the period, which inexperience rendered more difficult to me than the black letter of an earlier time, I obtained the expert assistance of our colleague, Mr. W. Paley Baildon, who most kindly looked into the matter during my absence from England.

Mr. Paley Baildon, availing himself of several clues with which I was enabled to provide him, and to which I will further refer, reports to me that he can find no trace within reasonable dates of any payments for the paintings in question.[1]

[1] Why search should have been in the chapel records or royal archives has never been made clear to me. It would seem as useless as it has proved to make search in such records for that

HASTINGS CHANTRY CHAPEL: PANEL IV. DEATH OF ST. STEPHEN

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We are thus thrown entirely upon conjecture for the origin of these works: they bear no name, signature, or monogram upon them. It perhaps would be matter for surprise if they did, as although of great interest from an antiquarian point of view, they are of inconsiderable artistic importance. Nevertheless, failing individual attribution one looks for a school or place of origin, and for myself I venture to think that the painting in the Hastings chapel, illustrating incidents in the life and death of St. Stephen, is so associated in style with English mediaeval screen paintings as to leave little doubt that it is a product of an artist of that class of work. The painting in the Oxenbridge chapel is of a later period, and clearly suggestive of several styles. This in itself is interesting, and certain evidences prompted me to assume that the treatment of the subjects in the life and death of St. John Baptist indicated a Low Country origin. German and Italian influences are distinctly observable, especially in the architectural backgrounds and accessories. Columns, pilasters, and ornaments indicate that the painter, whoever he was, had a knowledge of and was influenced by the Italian Renaissance, while the ceiling above the preaching-scene bears a striking resemblance to that pointed out to me in the British Museum in one of the subjects of Albert Dürer's life of the Virgin. The figures in this composition have unquestionably German reminiscence, both in type and costume. Although these are for the most part of a mean and jejune type, the heads in most cases being excessively large lead to an impression of dwarfed deformity; on the other hand, there is much dramatic action and directness in the composition, even if it is on the whole grotesque.

Not wishing to rely altogether on my own opinion as to the origin of this work, I consulted our honorary fellow M. Salomon Reinach on the subject, from whose letter to me, in reply, I quote the following extract:

'My opinion is that the painting with the story of the Baptist cannot be German, but rather the work of some very bad Dutch (not Flemish) craftsman. But few people know anything about those early or retrograde Dutchmen, who, though already influenced by Italy, not by great masters, continued to paint horribly. I should advise you to get the opinion of Mr. Jan Six, Amsterdam.'

Besides the partial confirmation of my own opinion this letter evidenced, I felt greatly interested in the matter, and moreover thought it only right to obtain the opinion of Mr. Six. Here again I met with cordial assistance and the utmost kindness, indeed that which I think should be recognized as an act of international courtesy of considerable moment. In reply to my queries and my recital of M. Reinach's opinion, Mr. Six wrote as follows:

which one would suppose, was a private matter, having only concern with the families or executors of Lord Hastings and Canon Oxenbridge.

'M. Reinach is certainly right in finding a Dutch influence, perhaps even a Dutch hand, in your picture. Italian influence is of course to be found in all European art of the beginning of the sixteenth century, and the lesser Dutch artists of the period freely use Dürer's prints wherever they find occasion. But the peculiar types of the women leave no doubt that we have a Master from Holland before us, akin to Jacob Cornelisen van Oosterman, the well-known painter and wood-cutter at Amsterdam, and to Cornelis Engelbrechts of Leyden, the Master of Lucas van Leyden, I mean specially the Salome and her maid, where she carries the Baptist's head, and the woman more to the left in the middle compartment. The grotesques on the pillars remind me most of Jan Mostaert of Haarlem, but I acknowledge that a Flemish artist might have the same designs. Dirck Villert, for example, has very similar designs, but he has not these women's faces.

The garments have not the strongly broken folds of the cloth as in the work of Jacob Cornelisen and Cornelis Engelbrechts, which points to a later date. You ask for a "name that would fit"; may I venture a suggestion?

Von Mander tells us that the son of Cornelis Engelbrechts, Lucas Cornelisen, surnamed de Kock, as he was not only a painter but also a cook, born in 1495, went to England during the reign of Henry VIII, and was heard of no more in that land, but that one of his paintings was brought to Holland, and in after times some people that came to Holland with Leicester (1585) searched Leyden for his works that appeared to be appreciated in England. I have never seen any work of Lucas Cornelisen, and cannot be positive, but I think there is some presumption that being his father's pupil he would answer to the case, as I take it.'[1]

Of course the clues I gave to Mr. Baildon were derived from this interesting letter of Mr. Six, but as I have previously said, they have led to no discovery at the Record Office. I have not submitted them to the Windsor authorities for further search, because they have assured me that no mention of payment to any one for paintings in the Hastings or Oxenbridge chantry chapels can be found, except some record of payment for painting the arms of Lord Hastings mentioned by Mr. Hope. Moreover, there are to my mind strong and sufficient reasons why they are not likely to be found. In the first place it is borne in upon me by the ill-fitting, ill-contrived arrangement of the paintings in regard to their architectural surroundings that they were not painted *in situ*. If they had been, not only is the spacing out of the subject quite unnecessarily eccentric in not conforming to the structural requirements of the chantries themselves, but there is also the apparently insurmountable difficulty in regard to the one space unfilled.

I do not for a moment maintain that they could not have been painted *in situ*, and upon the actual stall panels, but my contention is that it was not so. They were not painted on the actual stalls: the paintings are upon panels cut and applied; this is distinctly traceable at the top and sides: the panels go behind a

[1] In Pilkington's *Dictionary of Painters* Lucas Cornelisen is described as coming with his wife and family to England, where he received marks of favour from King Henry VIII, who appointed him his principal painter.

OAKENBRIDGE CHANTRY CHAPEL: PANEL I. ST. JOHN BAPTIST PREACHING

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moulding at the bottom. Then as there is no record of money paid whatever for time spent in painting, these two reasons lead me to the inference that we have before us in these pictures the remains of work brought from elsewhere, and simply cut up to fit the places they were intended to decorate or adorn; nothing more likely, at least in the case of the Baptist picture, than that they were altar-pieces from chapels severally dedicated to the respective saints, the incidents of whose lives they depict. In reference to the Baptist subject we know quite well that if it be not Dutch, or Flemish, at least it is of foreign origin, and from a source from whence such church furniture paintings were constantly supplied, not only on the Continent, but imported into this country before the Reformation in considerable quantities. The dissolution of the monasteries and consequent iconoclasm scattered these things, and it is not impossible that this John the Baptist picture was a derelict, and made use of as we see it now. I take it that the date upon the picture, 1522, preceding the epoch I have mentioned, in no wise indicates its deposition in the Oxenbridge chapel.[1]

We will now examine the chief characteristics of these works. Beginning with the Hastings chapel the first incident in the St. Stephen subject is the preaching (pl. XIV). Here, in a pulpit erected in an open landscape, St. Stephen, robed in an apparelled amice and albe and a dalmatic fringed along the edges, and somewhat strongly diapered with a red pattern, is holding a roll in his right hand and discoursing to a rather motley crowd of persons of both sexes, amongst them a woman wearing a head-dress of Richard III's time. These give evidence of their interest or edification by sufficiently dramatic attitudes and gestures; it may be noticed that, for some apparently necessary conceit, artistic propriety has been frankly sacrificed by making two of the onlookers much larger, especially as regards their heads, than those in the foreground. I think we may take it that this exigency arises from the fact that these two persons so emphasized are the donors of the painting, and this is not without value as a further argument as to its adventitious position in the chapel. The white blotches on the robe of the figure immediately below St. Stephen indicate the damage to this part of the work consequent on the flaking off of the paint. It is to be regretted that the photograph conveys little idea of the colour scheme further than the relative tones obtainable by careful isochromatic process. The colouring is very pleasant, however, essentially decorative, and continuity is preserved by the occurrence of trees through three of the backgrounds. The method of painting is very direct and careful of the preservation of a distinct outline.

[1] In the Hastings picture, the continuation of the panel behind the pendentives leaves a doubt that though not painted *in situ*, it may have been designed and painted for its place, an inference apparently justified by the inclined position of the crowned Almighty to adapt the figure to the arch.

The second subject represents Stephen brought before King Herod (curiously not the High Priest and council) (pl. XV).[1] Stephen, who is represented of cheerful countenance, still wears the dalmatic. A written charge is either being preferred against him or a warrant handed in by a man on his knees with, for his stature, an abnormally large head. He carries a mace of English type and hands the warrant to an officer of the court, vested in a long gown. Justice seems typified by a solemn person in a turn-up hat, the sword-bearer; he stands to the right hand of a throne on which is seated Herod. It will be observed that the king wears a crown, from the cap of which arises a dragon or demon crest. Above the canopy of the throne waves a banner or flag, bearing however no traces of ensign. The third panel is devoted to the subject of the saint's martyrdom (pl. XVI). The traditional treatment and types are fully maintained. The witnesses are represented as having laid down their clothes at the feet of the young man Saul, while others are with evident vigour and enjoyment proceeding with Stephen's lapidation;[2] the king, as before bearing the portentous crest, significantly affects to justify his condemnation of Stephen by pointing to the sword. One cannot pass over this subject without reference to the facial expressions of Stephen's persecutors, and the evident enjoyment of the painter, who depicted so impartially their divers malevolent characteristics. This is especially noteworthy in contradistinction to the indication of doubt and pitying interest arising in Saul. And here, if I may venture to go beyond the scope of a bald archaeological description, I think the treatment of the subject we are contemplating affords a remarkable opportunity for reflecting for a moment upon the *ad captandum vulgus* aspect of this as of many other mediaeval works of art. The directness of treatment of the story without words, when art in painting or sculpture was the popular means of instruction to unlettered folk, became almost stereotyped, so to speak, and while locally, of course, it is entirely pre-aesthetic, it is often pervaded by a grim humour, the sense of which is so strongly marked in the instance before us. The humour, however, cannot be taken as militating at all against the seriousness of the subject or the earnestness of the artist; with no room for aestheticism there cannot be any question of faith, and one may not without reason go so far as to say that the evidence of faith is as much in the direct ratio of the humorous inspiration as that of the school boy with a modern Guy Fawkes.

But to return to our painting; the small panel to the extreme right is occupied by the death and reception into heaven by the Almighty of the martyr's soul (pl. XVII). The unities are still preserved by the garb of Stephen, who

[1] See inscription in Latin hexameters beneath the painting.

[2] Flint stones are shown as being used, but although these are local it does not prove that this picture was painted for its present position.

OVENBRIDGE CHANTRY CHAPEL: PANEL II: DECOLLATION OF ST. JOHN BAPTIST

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prayerfully kneels with the blood streaming down his face and some of the missiles of his adversaries adhering to his head. Above him are two winged figures, angels who are bearing the saint's soul to heaven, and, as is not unusual, the soul is shown as a pure and naked infant. God the Father, wearing, it should be observed, a triple crown, holds in His left hand the orb of power, surmounted by the cross which He touches in benediction. The triple crown is noticeable for an extraneous significance, while the infantile embodiment of the soul is comparable with other representations. A notable instance, for drawing my attention to which I am indebted to M. Salomon Reinach, occurs in a miniature of the Crucifixion from a missal in the library at Heidelberg. Here we see the souls of the two thieves escaping from their mouths. M. Reinach describes the incident in these words in his *Gazette des Beaux-Arts*, 1884, 'De la bouche de chaque larron sort un petit personnage nu, figuration de l'âme qui s'échappe du corps. L'esprit du bon larron, à droite du Christ, pose son bras droit sur le doigt d'un Chérubin, qui semble l'attirer à lui. Celui de gauche ne reçoit aucun appui, mais il n'est pas, comme dans d'autres représentations analogues, enlevé par un démon.'[1]

I have said that I take this picture of the life and death of St. Stephen to be English, but I am quite prepared to admit that, like so much of our mediaeval work, it bears marked evidences of continental influence. Apropos of this the article on the Heidelberg illustration has a footnote, 'La figuration des âmes des mourants sous l'aspect des petits génies nus sans sexe paraît d'origine orientale (Syriaque et Byzantine); on en a des exemples dans les manuscrits dès le XI^e^ siècle (d'Agincourt, pl. 82), mais en Italie plutôt qu'au nord des Alpes.'[2]

It may be reasonable to presume that the choice of the St. Stephen subjects had relation to the judicial murder by Richard, duke of Gloucester, of William lord Hastings.

The painting in the Oxenbridge chantry chapel, if not so ancient as that just described, is with more pretensions to artistry almost as naïve and quite as interesting. While the heads are disproportionate and the faces for the most part ugly, they possess intensity of expression, if somewhat exaggerated, suitable to the scenes enacted. They moreover escape, in however slight a degree, the characteristic of the earlier work, which we have designated 'bogey'. This work, not visibly signed, bears the date 1522 upon the margin, or rather the riser of a step of the middle panel, apparently an afterthought. Whether this refers to the completion of the painting or the completion of the chapel by its intro-

[1] Mr. Hope reminds me that instances of the figuration of the souls of the dying occurred in several of the alabaster carvings recently exhibited by this Society.

[2] Extract from article by M. A. Maury, *Revue Archéologique*, 1844, p. 507, &c.

duction we are left in doubt, although the label of date is represented affectedly as having been applied by means of seals or wafers. The subject of this picture is the preaching and death of St. John the Baptist. The first panel shows the subject of the preaching before Herod and his court (pl. XVIII). St. John, traditionally clad, occupies a rostrum or pulpit similarly to St. Stephen's in the Hastings painting, and the logical nature of his discourse is sufficiently indicated by the position of the hands, especially noteworthy being the position of the thumb of the left hand and the forefinger of the right. The old and turbaned tetrarch, further habited in a gown bearing a handsome fifteenth-century pattern or diaper enriched with gold, sits on a throne or chair beneath a canopy duly tasselled and patterned of a like period. The grey-beard inclines his head to his left over his ermine collar in manifest annoyance and disgust at the words he hears; feelings not minimized by the proximity of the querulous lady to whom he is pointing with his left hand, while the hopelessness of the situation is naïvely suggested by the reversed sceptre which falls from his right. The anxiety of Herodias is too definitely expressed to admit of doubt, and she seems almost to be peremptorily demanding of the governor what he proposes to do. The courtiers and attendants witness this painful scene with forcefully depicted expressions of trouble, not to say of interest and sympathy as affecting themselves. The marble pavement and columns and other architectural features and enrichments contribute to the dignity of a scene which, however admirable in design and general colour, fills us with regret at its technical shortcomings.

The next panel (the middle one in the composition) is, by its attempt at realism, of most painful and uncompromising character, in marked contrast to the contemplative, if disturbed, nature of the first (pl. XIX). Here from the hands of a most truculent executioner, habited as a lansquenet, Salome receives in her charger, or dish, the decapitated head of St. John. The inconvenient and martyred forerunner lies upon the pavement between the princess and the soldier, blood pouring in dreadful evidence from the instant wound inflicted by the long-handled sword. Only the neck, arms, and back of St. John are visible, and the naked arms are bound by cords at the wrists. Salome wears a dress of a dark colour lined with ermine, the ample sleeves and train being borne by one of her numerous female attendants; the under dress is visible as to the sleeves, which are slashed, or banded, and enriched with gold. Salome's face seems to indicate not irresolution, but some doubt as to the wisdom of the proceedings. A conspicuous turbaned figure in an ermine collar, but showing only his back, looks on at the scene with other male attendants, and immediately above him and behind the executioner is an elderly female figure, whose identity it is difficult to verify. The architectural surroundings of this scene are consistent with those of that preceding, but of varied richness. A dwarf or jester has one foot raised on to

OXENBRIDGE CHANTRY CHAPEL: PANEL III. SALOME BEARING ST. JOHN'S HEAD IN THE CHARGER

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the step on which the date appears, and has perhaps in his charge in the foreground a seated white dog which seems to take, fortunately, no interest whatever in the recent bloodshed.

In the third and last scene of all (pl. XX) Herod and his consort are seated at table, at which a guest is present, a male friend or 'high captain', enjoying the confidence of the tetrarch. We are evidently present at Herod's birthday supper. A bowed figure of small size, the server by his attitude, may be opening vessels of wine, as he has a flagon on a table to his right hand. On the further side of the table also rises a column particularly rich in arabesque decoration of Italian character. This column is accompanied by another, and with the tapestry screen behind the royal party gives great distinction to the chamber. A group of persons occupying a kind of gallery at the back seem to connect this subject with the centre panel, an effect contributed to by a barrier or pole, which is otherwise unexplained. Approaching the King and Herodias, but beyond the front column, is seen Salome again, now bearing to her mother the dreadful proof of the Baptist's death. Salome also carries a wand in her left hand, and is accompanied by two other ladies. The pavilion in which the banquet is served is arched from the arabesqued columns and raised two steps above the tessellated pavement on which the bases of the columns stand. The heads of Herod, his consort, and his guest are particularly well rendered, making it the more surprising that the same care has not been bestowed on that of Salome, which appears quite unnecessarily large and disproportionate.

There remains one feature in this last composition yet to be described. This is not very noticeable at first, but on the eye getting accustomed to the gloom of the upper part of the background, a crystal globe can be seen. This is not suspended, nor does it form any portion of the architectural decoration, but it appears to be floating in the air a few feet above the tetrarch's head. It is perhaps needless to call attention to the prevailing belief in crystallomancy at about the period of this painting. Instances will be remembered of the introduction of the crystal sphere in various works of art, such as Quintin Matsys' figure (half length) of our Lord, where He bears a crystal orb surmounted by a jewelled cross, and, more immediately to the point, the crystal sphere in Holbein's picture of the two ambassadors. I have not been able to trace that Herod had a superstitious regard for a crystal sphere, but that he was superstitious there is no doubt, and being so, not improbably indulged in a form of divination common in his age, viz. as regarding mirrors and cups of silver; assuming this to be the case, the crystal sphere represented in this painting is as entirely consistent to the period as the costumes in which the mediaeval painter has vested his characters.

I have alluded to certain disproportions in the figures in these paintings; it should be observed, however, from certain standpoints this is not necessarily

regarded as a fault. The painter or sculptor of former times concerned himself far more with the telling and emphasis of his story than with rules of proportion; the expression of a face is more easily discerned if the head be large, too large, we should say, in much mediaeval work. The Greek canons of the period of Pheidias, as also the rules of proportion of Leonardo da Vinci, are the natural outcome of periods of intellectual growth when art was ceasing to teach and becoming a luxury; so when the head becomes unduly small we recognize the art manifestation not only of luxury but of decadence. My remarks as applied to the Baptist subject we are discussing point to inconsistency or at least indications of transition.

At the outset of this paper I remarked that I should refer to the condition of the paintings I have endeavoured to describe. Damp from condensation and insufficient ventilation of St. George's chapel, coupled with over-heating, have affected them seriously; areas of painted surface are loose and non-adherent where the paint has not absolutely flaked off. The removal of the pictures and treatment of the backs with the view of restoring adhesion was recommended by myself before the discovery that removal was impossible without extension of damage. This being the case, I have not hesitated to recommend careful application of adhesives to the fronts, especially injection in the neighbourhood of detached pigment. If absolute restoration cannot be obtained, at least rapid decay would be arrested. The dean and chapter are aware of their responsibility in the matter, and I presume do not require urging to take early and necessary steps for the preservation of these works.

I should like in this paper to give expression to my thanks and my great indebtedness to the Rev. Canon Dalton for many facilities and much information in regard to the chapels; also to Mr. St. John Hope for valuable information, especially in regard to the English character of the St. Stephen picture; to M. Salomon Reinach and Mynheer Jan Six as already mentioned, and to Mr. W. Paley Baildon.

VI.—*A Mural Glass Mosaic from the Imperial Roman Villa near Naples.* *By* R. T. Gunther, *Esq., M.A., Fellow of Magdalen College, Oxford. With a Note on the Analyses of the Green and Blue Glass, by* J. J. Manley, *Esq.*

Read 23rd May, 1912.

The mosaic was fixed in a small niche in a wall of the buildings of the Imperial Villa on Posilipo, near Naples. One part of the site, now submerged beneath the sea in consequence of a post-Roman land movement, has already been described,[1] but later surveys of the very extensive antiquities and ruins on the hill above still await publication. Among other discoveries, we have been able to find evidence that this fine property, stated to have been left by Vedius Pollio to Augustus, was still in the imperial possession as late as the reign of Hadrian, and that considerable alterations to the buildings were made at that period.

The mosaic has a threefold claim on our interest: first, on account of an intrinsic beauty that captivates us, both for colour and for the fresh natural charm of the simple design; secondly for its border of spiral glass rods; and thirdly for the fact that the colour of certain of the green tesserae is due to oxide of uranium,[2] a metal that has not hitherto been recognized as a colouring matter in ancient glass. It now remains for Italian mineralogists to identify the locality whence Roman glass-makers might have obtained their uraniferous sand.

The mosaic was found under the substructures on the eastern side of the Gaiola hill.

The Eastern Substructures and Terraces.

There are vaulted substructures everywhere along the western slope of the Gaiola valley. Thick retaining walls and vaults of concrete, springing from walls faced with *opus reticulatum*, extend for many yards, and, even in their present ruined condition, strongly uphold the hill-side. When complete the effect of this pile of building must have been imposing. It must have presented an appearance very like that of certain frescoes of large edifices built around and beneath with terraces rising step-like one above the other in a graduated series (cf. *Archaeologia*, lviii, p. 6, fig. 1). And here we find no less than five or six such

[1] *Archaeologia*, lviii, 499.

[2] See Appendix.

successive terraces carried on substructures, the massiveness of which reminds one of the concrete works of modern civil engineers.

Of the lowest building of all we have no detailed information, but I have been informed that walls and pavements are buried some 12 ft. deep below the surface of a garden. The accumulation of soil here is one of the consequences of the subsidence of the land, of which adjacent ruins buried in the sea-beach afford the clearest evidence. Owing to the rising of the beach, soil washed down from higher up the valley has not been able to reach the sea, and has accumulated in the valley bed. We may therefore look upon the walls at the garden level (fig. 1), in which the glass mosaic was found, as not belonging to the lowest or 'basement' floor (I), but as belonging to the 'first floor' (II) of the whole series of constructions.

There is evidence that in front of this wall there existed a row of arched vaults carrying the terrace of the second floor (III) at a height of 19 ft. above the first, but of these vaults only parts of two piers remain, though outlined on

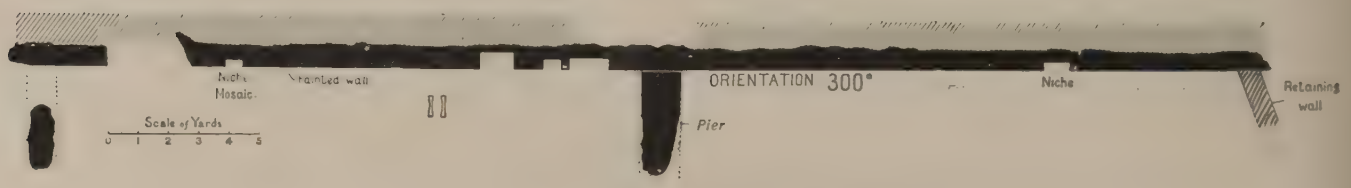


Fig. 1. Ground plan of walls at the level of the mosaic niche.

the face of the back wall are the scars of arches and of several other piers. Six yards beyond the first pier and within a vaulted chamber that was next but one to it, is a rectangular niche containing the beautiful glass mosaic. The walls of the chamber were plastered and painted in the manner presently to be described.

Some ten yards further north at the present ground level, and choked with rubbish, are three other niches of varying heights (3 ft. 6 in., 2 ft., 2 ft. 6 in.), but without decoration. Then comes the remaining pier, and at eleven yards beyond it another small niche, and six yards further a modern retaining wall which holds back arable soil in the valley bed (fig. 1).

The arches on this tier (II) were about 13 ft. in height. They supported a terrace which has been raised to form a garden walk. On this terrace (III) and standing back is a second tier of vaulted substructures of which the two southern-most chambers (fig. 2, A_3, B_3) are in a fair state of preservation. They now form useful cellars under a small garden house; their floor is about 6 ft. below the modern garden path. The interior was fine-plastered over a reticulated face and painted a rich yellow with the usual panelling of red lines. The chambers are nearly square, 12 ft. 8 in. deep by 12 ft. wide, and are shown, with the other

structures on the hill above them, in plan and in section in figs. 2 and 3. The black represents Roman work; the dotted, a conjectural restoration; the spotted, modern building.

Further north are four more barrel-vaulted chambers (C–F) of which the original floor is buried 3 ft. deep under a modern floor. The eastern wall has fallen, leaving them gaping open. The vaults, still fairly complete, show

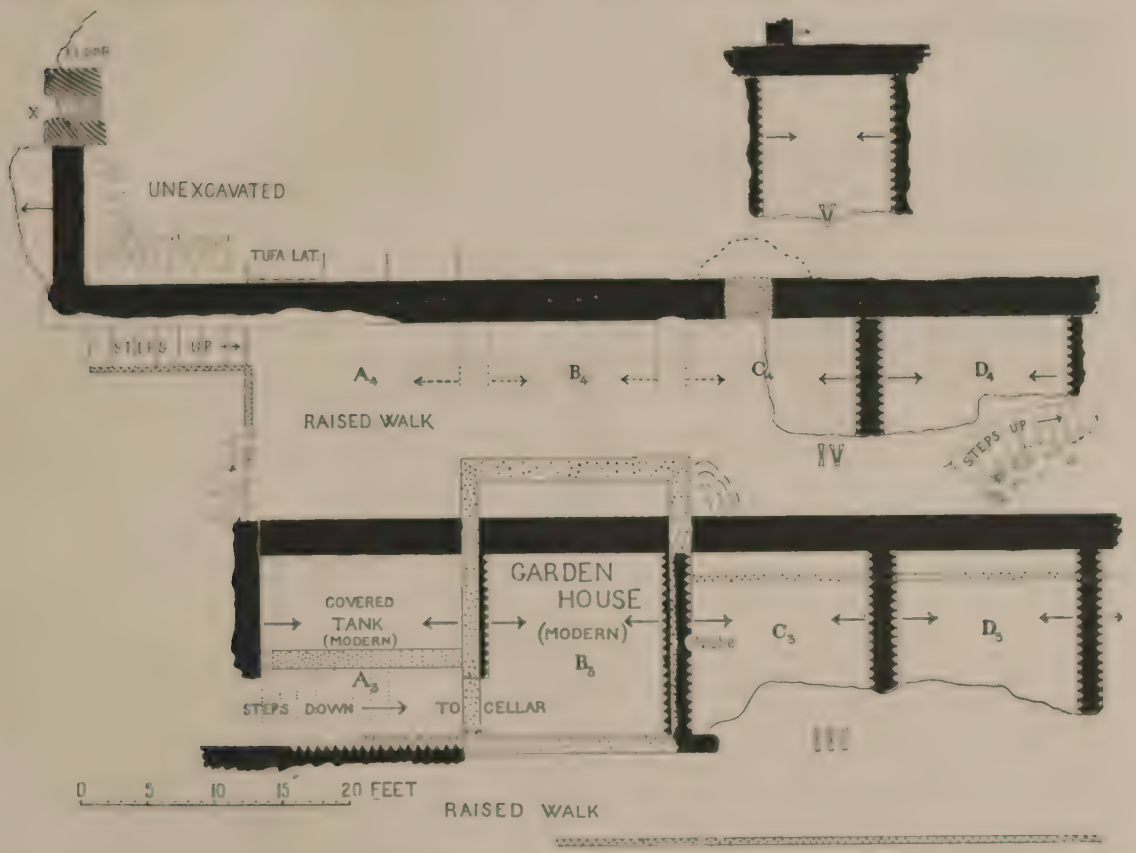


Fig. 2. Plan of the walls on floors III, IV, and V.

impressions of the boards which were used as centering to hold up the concrete until it had set. The top of each vault rises about 4 ft. 6 in. above the spring of the arch. There is a small niche in C_3.

For quite forty yards beyond the garden house are similar constructions all belonging to the same tier; but the last two chambers have a slightly different orientation to the rest. The walls of one of them are coloured red, and are provided with two niches, one at the back, shallow and arched, the other in the north wall, rectangular and with grooves for two shelves.

Of the building upon terrace IV only half vaults of two of the chambers, D_4 and E_4, remain, but traces of others, B_4 and C_4, are not hard to recognize. A flight of modern narrow steps leads up to the substructures of tier V, and another up to what may perhaps be considered as those of a sixth tier, which is on a level with a well-appointed hot bath, at about 50 ft. above the present sea-level, and which would therefore have been some 70 ft. above the Roman sea-level.

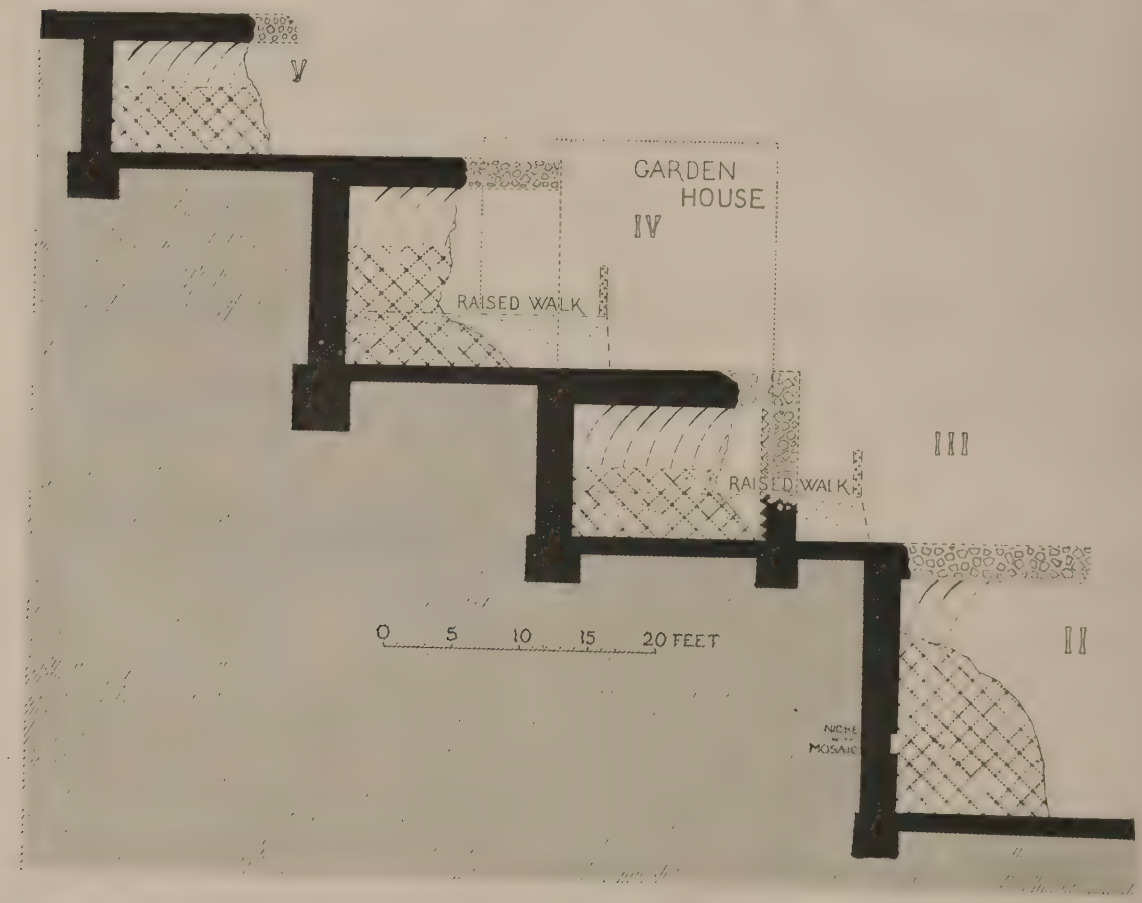


Fig. 3. Section through the substructures and terraces of floors II–V.

Here and there are large blocks of concrete, apparently the foundations of the higher parts of the building, and on terrace V we noted a bit of wall faced with tufa at a height of 10 ft. above terrace IV.

The Room with the Glass Mosaic.

All that is left of the mural decoration of this chamber shows it to have been of a simple type, at any rate so far as the dado was concerned. White or cream-

A

ROMAN GLASS MOSAIC FROM THE IMPERIAL VILLA NEAR NAPLES

A. Twisted glass rod from border, full size

coloured walls were divided into panels by black bands flanked by narrower lines of Pompeian red. A second inner contour, in red, surrounded the lower panels (fig. 4).

In the western wall of the chamber is the small niche lined and framed with the mosaic. The niche had apparently been hollowed out in the wall subsequent to the plastering and indeed to the linear frescoed decoration, for it cuts into the red lines which frame the second panel.

The opening of the niche measures 17 in. high by 20 in. broad, and it is about 8 in. deep. The sides as well as the back are encrusted with the mosaic.

Fig. 4. Mural frescoes near the niche with the mosaic.

The Glass Mosaic.

On the back, against a background of bright cobalt blue representing the sky, are three plants, a reed growing between two green plants with simple ovate or oval leaves, over which is hovering a white dove with tail spread and wings outstretched, head and feathers being cleverly indicated by a linear arrangement of tesserae. The leaves of the plants are treated in a very realistic manner, mosaic cubes of two shades of green being employed in the shading, and between them bits of deep blue-black glass have been skilfully introduced to show up the leaves in greater relief. Below are one or two flowers, simply sketched a central blue tessera surrounded by four yellows.

The bottom of the little picture is bordered by a trellis, represented by yellow lines crossing X-wise on a blue ground. Round the whole run lines of white and blue tesserae and then one of cockle-shells.

The nature of the narrow mosaic decoration of the sides of the niche is apparent from a piece, measuring 13 in. by 5 in., still *in situ* on the left. About ten small crosses placed vertically and in alternate colours are inlaid in a background of black glass, now iridescent. Each cross is formed of five tesserae, the alternate crosses being formed by tesserae, four yellows surrounding one blue, and four whites surrounding one yellow. The most interesting feature of this side panel is, however, its inlaid rectangular border of spirally twisted glass, black with a thread of yellow, pieces of which were found *in situ* (A, pl. XXI). A cockle-shell border surrounds this, and round the inner angles of the niche the rope-like glass ornament is repeated. The shelf of the niche appears to have been coated with plain hard plaster.

The niche was framed in a mosaic border inlaid in the plaster of the wall and surrounded by a moulded marble frame in relief. The pattern of the mosaic border was formed by interlacing bands of yellow mosaics on a background of cobalt blue, and flanked on either side by three parallel lines, each a tessera wide, in order from within outwards yellow, green, blue.

The outer marble frame was fixed in the usual way by iron holdfasts, rusted traces of some of which still remain. Its size over all may be estimated, from the scar left on the plaster, at about 2 ft. 5 in. wide and 3 ft. in height.

In an attempt to ascertain the age of this little glass picture, at least three factors may profitably be taken into consideration.

First, the glass mosaics. We find essentially similar ones upon the handsome encrusted columns from a house in the Street of Tombs at Pompeii, now in the Naples Museum, and in several fountain-niches of the same period in Houses Regio VI, Ins. viii, nos. 22 and 23.

Secondly, the cockle-shells, which are employed in exactly the same manner and affixed by the same reddish-brown cement as in the ornamentation of the above-mentioned fountain-niche.

Thirdly, the twisted glass rods, which so far as we have been able to ascertain have not hitherto been described as forming part of the decoration of a mural mosaic, although similar detached sticks of twisted glass have not unfrequently been found on other sites; and there is a fragment of plaster measuring 4 in. by 2 in. in the Capitoline Museum with three glass rods embedded.

In style, then, as well as in the materials with which it is decorated, this mosaic reminds us of those of the charming fountain-niches of which some half dozen have been found in Pompeii. In several of them we see the cockle-shell border, and birds flying over plants; cf. Presuhn's illustration of a mosaic found in Reg. VI, Ins. xiv, no. 43. And the same details may be seen in a fountain-niche found at Baiae, and now deposited in the South Kensington Museum.

In the absence of any evidence to the contrary, it is not unreasonable to

conclude that the period to which the construction of this glass mosaic is to be referred cannot have been very long before or long after 70 A. D. We see no good reason for believing the niche to have been intentionally decorated with the Christian emblem of the Dove, although that idea was the one which first occurred to us. But in spite of the great resemblance of this little mosaic to the fountain pictures, it may possibly have formed the background of a small lararium or shrine sacred to a deity, in which case a religious significance may be attributed to it. It will be remembered that the dove was very closely connected with the founding of the first Greek colony upon this site, and that this fact was never forgotten in ancient Naples. The ships of the original Chalcidian colony had been piloted from Euboea to the Campanian shore by a dove, and in pious memory of that event, the cult image of Apollo in the Temple of Apollo at Naples is said to have had a 'columba' perched upon his left shoulder.

Ipse Dionaea monstravit Apollo columba. Stat. *Silv.* iii. 5. 80.

Huius classis cursum esse directum alii columbae antecedentis volatu ferunt.
Velleius, i. 4.

Tu ductor populi longe migrantis Apollo
Cuius adhuc volucrem laeva cervice sedentem. Stat. *Silv.* iv. 8. 47 8.

APPENDIX

Analyses of Green and Blue Glass from the Posilipan Mosaic. *By* J. J. Manley, *Hon. M.A., Daubeny Laboratory, Magdalen College, Oxford.*

Several years ago, some fragments of two specimens of ancient Roman glass were handed to me by Mr. R. T. Günther, for analysis. The colour of one of the two specimens was pale green, and that of the other bright blue; these colours led us to suspect the presence of iron oxide in the former and of cobalt oxide in the latter. The analytical work was carried out under my supervision by two of my pupils; Mr. E. G. Laws, of Magdalen College, undertook the analysis of the green-tinted specimen, and Mr. W. B. Shaw, of Wadham College, made himself responsible for the analysis of the blue fragments. As the total available material was very small, more than usual care was necessary for ensuring success; and therefore somewhat exceptional refinements were introduced for the purpose of securing, as far as possible, trustworthy data for determining the composition of the two sets of the glass fragments.

(1) The green-tinted specimen.—During the course of analysis, traces of a substance, which for some time remained unidentified, were encountered; but ultimately we were able to satisfy ourselves that the body was uranium oxide. It must be confessed that this conclusion was at first accepted with some degree of reluctance and scepticism; but the new evidence supplied by additional tests finally convinced us that the opinion which we had already formed as to the nature of the body was correct and indisputable.

As the quantity of uranium oxide obtained for weighing was 1·7 milligram only, the difficulty of correctly determining the actual amount present will be apparent. It is believed that, notwithstanding the great care bestowed upon the work, the nature of the experimental errors led us to over-estimate the quantity of uranium oxide. Taking all the circumstances into due consideration, it would therefore appear that the best plan is to state the weight of the uranium oxide as a difference. By this method, the percentage of uranium oxide present in the glass is found to be 1·25. The percentage deduced from the weighed oxide (1·7 m.grm.) was equal to 2·58. The complete analysis of the glass was carried out upon the small weight of 0·167 grm. The final result was as follows:

Composition of the green-tinted glass.

Silica	62·11 %
Iron oxide	2·70 %
Alumina	1·76 %
Lime	8·90 %
Magnesia	2·90 %
Uranium oxide	1·25 %
Potassium oxide	20·38 %
	100·00 %

So far as we have been able to discover, there is no other recorded instance in which uranium has been detected in Roman glass; and it is highly improbable that the maker was aware of its presence. We may conclude almost certainly that the use of a sand having uranium as one of its constituents was merely accidental. It is of course quite possible that the maker observed that by using sand from a particular locality he was able to manufacture a green-tinted glass which was more appreciated and sought after than the green glasses produced with the aid of other kinds of sand. If there is any truth in this conjecture, we should naturally expect to find other specimens of the same glass in the neighbourhood in which Mr. Günther found his. The discovery of the source of the uranious sand employed by the ancient glass-maker would be an interesting find, and possibly an important one too.

Having completed the analysis, we thought it would be interesting to attempt on a small scale a synthesis of the glass; the proper quantities of the various constituents were therefore weighed out, introduced into a platinum crucible, and suitably heated in a furnace. In due time we obtained a specimen of perfectly transparent green glass, quite unlike the original Roman glass, which was very opaque. We were naturally disappointed with the result, but in a short time we were so fortunate as to discover how the original glass might be imitated as nearly as possible. Some of the new glass had been broken into small pieces: it was decided to re-melt these with the object of producing one larger fragment. On being re-introduced into the crucible, the small bits were at first gently warmed in order to avoid decrepitation; during this operation the lid of the crucible was not used, as it was desired to watch the progress of the melting of the glass. The gentle heating had been conducted for a short time only, when we observed the transparent fragments almost suddenly transformed into an opaque variety which presented the same general appearance as the original Roman glass; and apparently the only characteristic which enabled us to distinguish between the new and the old glass was the absence of any 'weathering' on the surface of the former. This altogether unexpected discovery of a method

whereby it was possible to effect the 'ageing' of the glass, led us to infer that the Romans probably adopted a similar plan for rendering transparent glass opaque. When the temperature of the opaque fragments was raised to the melting-point of the glass, the transparent form was reproduced. It was thus found possible to transform either variety into the other, as often as might be desired.

We next made a small portion of glass from which the uranium oxide was omitted; its green colour was, in our opinion, just a shade darker, but in other respects its general appearance was similar to that of the glass first made by us; the new glass was also as easily aged or rejuvenated as our first specimen.

(2) The blue-coloured Roman glass.—The blue colour of this specimen was due, as is usual, to the presence of cobalt oxide. The glass was coloured throughout its entire mass, and not 'flashed'. It was found that the cobalt oxide present in the glass was approximately equal to 4·2 per cent. The general composition of the glass was very similar to that already given for the green-tinted variety, and from a chemist's point of view calls for no further comment.

VII.—*On the Date of Grime's Graves and Cissbury Flint-mines.*

By Reginald A. Smith, *Esq., B.A., F.S.A.*

Read 9th May, 1912.

The formal recognition by the Monaco Congress (1906) of the Aurignac stage of culture marks a distinct advance in the classification of palaeolithic cave-relics. The point has been keenly debated, but most are now agreed that Aurignac, as a typical station, comes between Le Moustier and Solutré, and represents a civilization that extended over a large part of Europe. This stage has in recent years been so thoroughly studied that its distinctive types can be easily recognized, and many cave-deposits readily fall into this division; but so far very little of this sort has been noticed in England,[1] where the industry seems, however, to have had a special and a splendid development.

The proposal to transfer the well-known culture of Cissbury from the neolithic to the late palaeolithic period, that is to about the middle of the Upper Pleistocene, must appear revolutionary; and a single paper can only offer a few suggestions towards the solution of several problems involved. But the cultural evidence alone is practically decisive. On consideration of several analogies to be found in the national collection, the President, as Keeper of the British and Mediaeval Department of the British Museum, was satisfied that a *prima facie* case had been made out; and it is hoped that the old difficulties connected with the period in question will be removed by further study in the light of newly ascertained facts.

A brief outline of what is necessarily a long paper may next be given, as the subject is discussed from more than one point of view. The present arrangement is due to the necessity of first recalling the main points established by excavations at Grime's Graves and Cissbury some forty years ago, and not readily accessible except in large libraries. Following a description of either site is an analysis of the finds so far as they bear on the date and culture; and the relation of what may be called the Cissbury celt and certain other types to the Drift or river-gravel deposits is illustrated by examples both in England and abroad.

[1] Dr. Allen Sturge's paper on Cave-periods in East Anglia is not yet published: a summary appeared in the *Antiquary*, May, 1912, p. 193.

To facilitate the recognition of these types as a local facies of the Aurignac culture, a summary of the main features of this stage in the palaeolithic cave-period is given; and the distribution of its characteristic forms is indicated both in the British Isles and distant parts of the world. Next, the geology of several sites is noticed in order to show their striking similarity and to associate their horizon with the later Loess of the Continent. Once the connexion is admitted, various arguments against a palaeolithic date may lose much of their cogency; and recent evidence with regard to the domestication of animals, polishing of stone, and baking of pottery will be adduced to show that the difficulties are not insurmountable. The subsequent evolution of the Cissbury types will be outlined with all diffidence, as the neolithic period is still exceedingly obscure, and the position of several of the best-known finds in the series has not been finally determined. Finally, a word is said in favour of the English climate, as influenced by an insular position in the track of the Gulf Stream; and doubts expressed as to the validity of ideas expressed by such terms as 'mesolithic' and 'hiatus', which appear to have been invented to disguise various gaps in our knowledge of the remote past. Though the scheme suggested may seem to shorten the neolithic period, it will be contended that the Cissbury culture, generally attributed to the later Stone Age, is of much greater antiquity; and that progress, though checked from time to time, has not been seriously interrupted since man first took to chipping tools of flint.

In 1870 our Fellow Canon Greenwell excavated one of 254 saucer-shaped depressions known collectively as Grime's Graves[1] in the parish of Weeting, Norfolk, 3 miles north-east of Brandon; and found in the chalk rock a mine which reached a depth of 39 ft. from the surface, and had evidently been opened for the purpose of working a particularly good layer of flint occurring at that depth. The pit was circular, with a diameter of 28 ft. at the mouth, tapering to 12 ft. at the bottom, which was flat and gave access to a number of galleries radiating on the same level. A feature on which the Canon remarked with some perplexity was a layer of dark yellow sand 13 ft. thick above the chalk rock, interspersed with coarse nodules of flint similar to those on the surface of the chalk. The significance of this will be discussed later (p. 144); and though it is doubtful whether the ancient miners ever pierced this stratum, it is clear that they were undaunted by the chalk, as a seam of inferior flint (the 'wall-stone' of the modern flint-workers) was passed at $19\frac{1}{2}$ ft. from the top of the chalk. No diagram of the vertical section has been published, but the lowest 18 ft. consisted of pure chalk taken from between the beds of flint, and next in order came the thick bed of sand, surmounted by various layers perhaps derived from other pits.

[1] *Journal of Ethnological Society of London*, N.S. ii. (1870), p. 419.

Many of the specimens in the British Museum and certain private collections from Grime's Graves were collected from the surface in the immediate neighbourhood of the reopened pit,[1] but some were found in the filling, and comprised implements of flint, deer-antler, and bone, and a remarkable polished celt of basalt (fig. 101) with almost circular section and pointed butt, found in one of the mine-galleries. The authenticity of this find has recently been called in question; but the evidence of the excavator, confirmed by Dr. Allen Sturge, who made careful inquiries in the neighbourhood, should dispel all doubts. Marks on the gallery-wall were recognized by the Canon as made in mining with this tool, and he may be said to have prophesied its discovery.[2] The usual tools were, however, picks and wedges ingeniously made out of red-deer antlers,[3] which were trimmed by fire and hacking with flint; and it was noticed that the 70 picks were all found below 17 ft. from the surface. The antlers were of large size, and all but eleven had been shed.

Animal bones, all found between 4 ft. and 28 ft. from the surface and not in the galleries, had been broken for the marrow, and nearly all were of young calves, probably of the species *Bos longifrons*; but the goat or sheep, the horse, pig, and dog were also represented. This group has always been described as domesticated, but it will be seen in the sequel that there are grounds for modifying this description, in spite of the widespread superstition that animals were not tamed till neolithic times.

It is specially noted that no pottery was found in the pit; and a layer of charcoal, no doubt the remains of a hearth 4 ft. wide and 5 ft. long, was encountered at a depth of 28 ft. Fourteen hammer-stones made of quartzite pebbles derived from the Boulder-clay were no doubt used in flaking the flint, of which material some interesting specimens were recovered. Neither in the pit nor in its vicinity was any trace of polishing (grinding) observed on flint.

One of the implements found near Grime's Graves, and published by Canon Greenwell in his paper on the flint-mine opened by himself, was significantly discussed by Sir John Evans.[4] It resembled the latter's fig. 17 from the Downs near Dunstable, and approached very closely to ovate implements from the river-gravels; but 'from the manner in which it is fashioned and from its being found in company with worked flints unquestionably belonging to the surface-period', he regarded it as neolithic. In a foot-note this judgement is practically reversed, as 'the discoveries of Mr. Worthington Smith at Caddington suggest the possibility of this (Dunstable) specimen being, after all, palaeolithic'. Other

[1] *Op. cit.*, pl. xxviii; pl. xxx gives the specimens found in the excavation.
[2] *Man*, 1908, no. 92; and see p. 147 below.
[3] The subject was fully discussed by Mr. Horace Sandars, F.S.A., in *Archaeologia*, lxii. 101.
[4] *Journ. Ethnol. Soc.*, N.S. ii, pl. xxviii, fig. 7; Evans, *Stone Implements*, 2nd ed., p. 72.

examples were found at Cissbury, also in Hants and Yorks., and larger specimens of the same type have been obtained from the ancient flint-factories of Belgium (Evans collection).

The flint implements recovered from the pit at Grime's Graves and the immediate neighbourhood fall into two classes as regards patination: while the roughly-shaped lumps have a dull white surface with sharp edges and ridges, the better implements are generally of bluish-grey colour, often with spots of iron-staining on the ridges, the surface lustred to a large extent, and almost chalcedonic. The surface of the latter group is not appreciably decayed, and in spite of its exceptional hardness has no sharp edges or angles, but is often striated in such a manner as to suggest ice action. The majority of specimens collected from the site by Canon Greenwell were presented to the British Museum, most of the illustrations being from that collection; but a good series acquired at the same date has passed into the hands of Dr. Allen Sturge, and other collectors possess specimens from the surface, but not so intimately associated with the pit. The following list gives the salient points of selected specimens, and parallels from other sites where such are relevant to the present inquiry:

Fig. 1. Ovate hand-axe, fairly thin, both faces with primary flaking, and the edges curved as indicated by the dotted line, as usual a reverse S-curve. Except for its lustrous bluish surface, this might be taken for a St. Acheul type from the river-gravels, somewhat late in the middle Pleistocene; and there can be little doubt that it is a degenerate hand-axe.

Fig. 2. A large white lump better shaped than many, and having (as often) a thick back for the hand, and a zigzag cutting edge made by alternate flaking. The edge and workmanship are reminiscent of the Chelles period, but the style of flaking was no doubt dictated by the use to which the implement was to be put; and the present specimen represents a number of chopping-tools, somewhat more roughly made than at Cissbury (fig. 25). The same type, somewhat longer, is found at Le Moustier.

Fig. 3. A boldly-flaked tool of segmental plan, with a broad flat base and all the work on one face. The curved edge is nearly all sharp, and the tool seems to have been intended for chopping. A patch of crust on the base should be noticed as proof that the implement has not been accidentally broken across, but is, like many others of the type, complete.

Fig. 4. A specimen apparently related to the last, but with certain features that are exactly duplicated on another from the site. The plan is a segment of a circle, the faces nearly flat, one flaked, the other a plain fracture with a large bulb of percussion which interrupts the cutting-edge.

Fig. 5. A type common both on this site and at Cissbury, and often regarded as one end of a celt that has been accidentally broken across. This is evidently erroneous, as the base frequently bears the original crust of the nodule, or is furnished with a

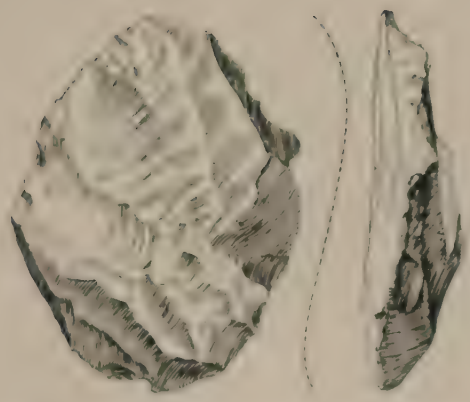


Fig. 1. Implement of Drift type, with side view and curve of edge; Grime's Graves. ½.

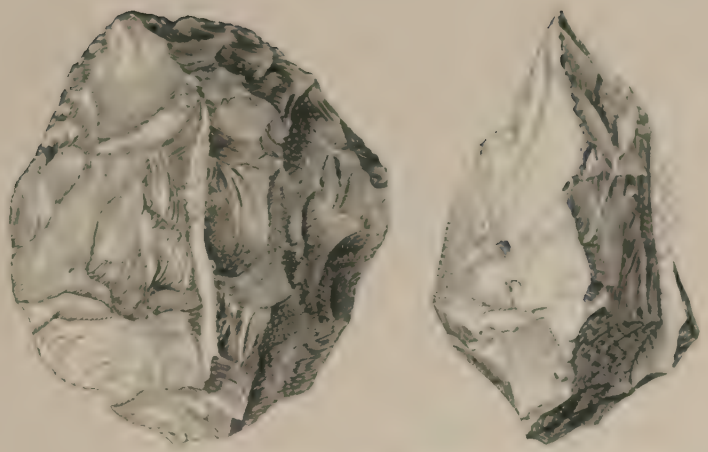


Fig. 2. Flint chopper, with side view, showing zigzag cutting-edge; Grime's Graves. ½.

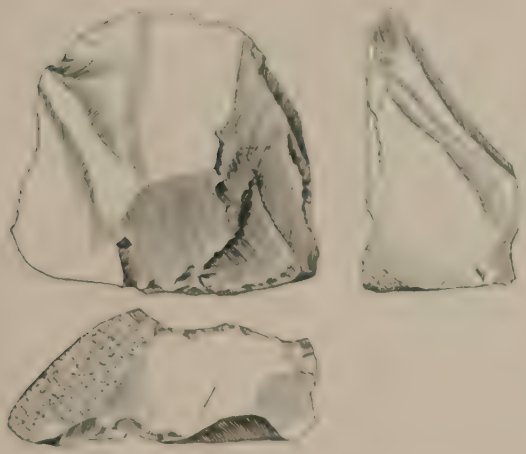


Fig. 3. Segmental tool flaked on one face, with views of side and base; Grime's Graves. ½.

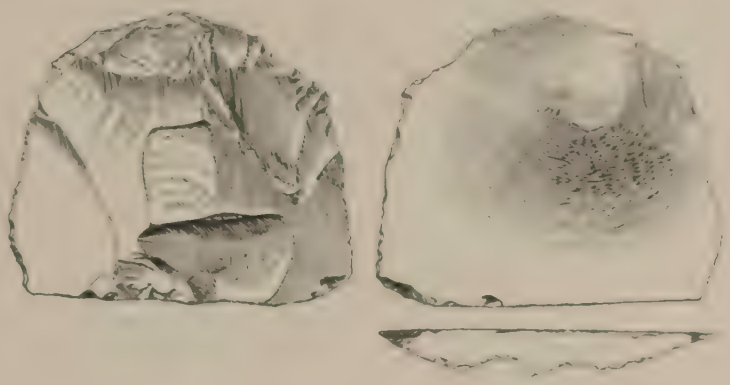


Fig. 4. Segmental tool, blunt at top, with views of back and base; Grime's Graves. ½.

Fig. 5. Flint tool flaked on both faces, with section; Weeting. ½.

Fig. 6. Celt of Cissbury type, with section; near Grime's Graves. ½.

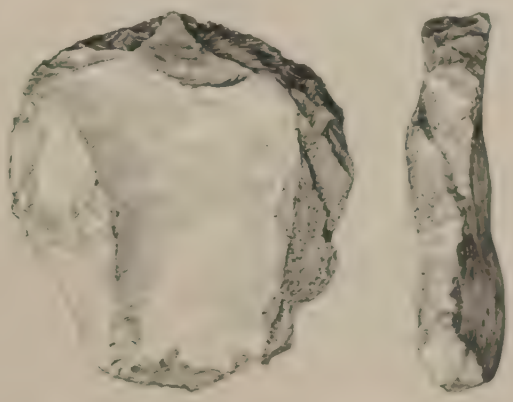


Fig. 7. Steep-edged scraper, with side view; Grime's Graves. ½.

hinge-fracture to accommodate it to the hand. As usual it is flaked on both faces, which have about the same convexity, and the sides are approximately parallel.

Fig. 6. An exceptional piece from this site both in form and colour. The surface is much altered and is milk-white all over, the section almost of lozenge form, the edges parallel, and both ends curved and sharpened. It is a celt in the ordinary sense, and serves to connect Grime's Graves with Cissbury, where the type is very common and of finer workmanship. It has a few spots of iron-staining on the ridges, and was not found in the pit but in the vicinity on the surface. A companion piece is in Dr. Sturge's collection from Grime's Graves.

Fig. 7. A scraper of exceptional form and dimensions for this site. The lower face is a plain fracture with a large bulb of percussion opposite the scraping edge, and the other face is boldly flaked, with crust at one side. The working-edge is very steep, and the surface is white, with the core showing as blue in places. Round-scrapers on both sites have more than once been described as rare, but this and the following are much larger than usual, and recall the imposing productions of the early Le Moustier stage, as represented at Northfleet, Kent (Mr. G. J. B. Fox).

Fig. 8. A round-scraper not so boldly fashioned as the last, but otherwise similar. The steep working-edge is shown on the right, and the side view also gives the large bulb of percussion on the plain lower face. This and the foregoing are obviously related to a white specimen illustrated by Mr. W. G. Smith[1] and found by him 16 ft. deep at Caddington, near Luton, evidently on the upper palaeolithic floor below contorted Drift.

Fig. 9. Small white scraper with steep working-edge and flat faces, tapering below to form a tang or handle. The Aurignac fluting is noticeable here, and another, practically identical, has been found at Seaford, Sussex.

Fig. 10. A typical 'nucleiform scraper', known as the *grattoir Tarté* (being particularly common at Tarté, a cave of the Aurignac period in Haute-Garonne). Its use as a plane is however doubtful, in view of the uneven base of several; and till its true function is determined, it may be called a 'flint-cone'. Apart from other evidence there might well be hesitation in accepting the identity of specimens on sites so far removed; but many coincidences will be noticed in the following pages, and no apology is necessary for assigning English specimens to the Aurignac stage, that being the horizon indicated by many cave-finds in the south of France. Another specimen still more symmetrical is illustrated (fig. 33) from Mr. T. H. Powell's collection, from the Sussex downs at Seaford, and it is now found that the type is common in the south of England. For instance, one in the Blackmore museum from Whitsbury, six miles south of Salisbury, 0·9in. high, suggested further search; and Dr. Blackmore states in a letter that six or seven are stored in the museum from the Donhead district, on the Wiltshire border, three miles north-east of Shaftesbury.

Fig. 11. A peculiar but typical specimen, which may be termed a humped scraper or plane. Roughly of segmental form, it differs from another type with the same outline in

[1] *Man, the Primeval Savage*, p. 112, fig. 73.

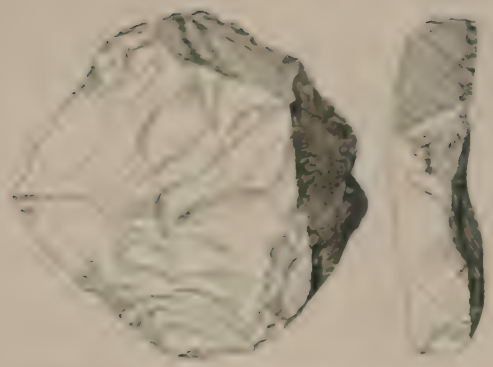


Fig. 8. Steep-edged scraper, with side view; Grime's Graves. ½.

Fig. 9. Tanged scraper, side and top views: near Grime's Graves. ½.

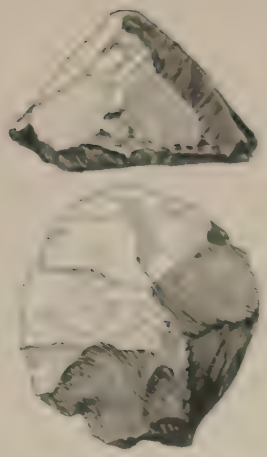


Fig. 10. Flint cone, side and top views; Grime's Graves. ½

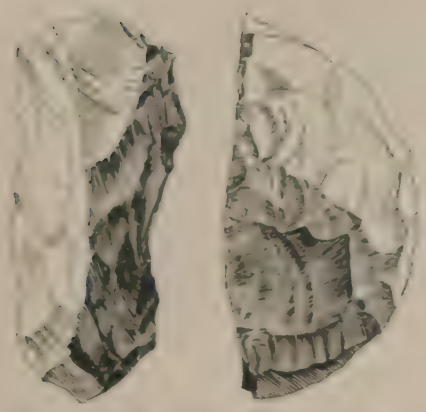


Fig. 11. Carinated scraper, with side view; Grime's Graves. ½.

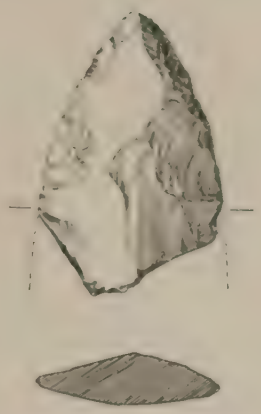


Fig. 12. Part of leaf-shaped blade, with section; Weeting. ½.

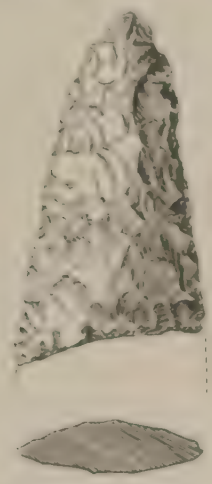


Fig. 13. Part of leaf-shaped blade with section; near Grime's Graves. ½.

Fig. 14. Bone piercer; Grime's Graves. ½.

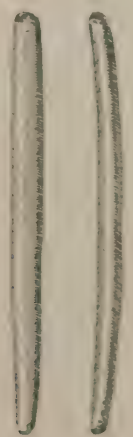


Fig. 15. Bone tool, top and side views; Grime's Graves. ½.

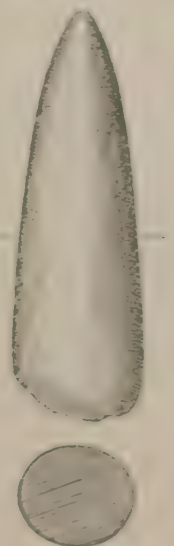


Fig. 16. Basalt celt, with section; Grime's Graves. ½.

having the working-edge at one end, not on the periphery. The top view shows a slight compression in the middle of the side, which is no doubt intentional and makes the resemblance to certain planes of the Aurignac period all the more striking. The parallel chosen for illustration (fig. 36) is in the British Museum with another specimen much smaller, and both were found by Messrs. Lartet and Christy at Les Eyzies, a cave-deposit generally assigned to the transition from Solutré to La Madeleine. There was certainly much of that date discovered; but many planes with steep fluting, not to mention a tanged point referable to the Font Robert[1] or latest phase of the Aurignac culture, prove that an earlier deposit was also excavated. The evidence for this contention is ample, and other forms that are reproduced at Cissbury or Grime's Graves may therefore be assigned with little hesitation to the Aurignac stage. The Grime's Graves example is bluish grey with hard lustred surface, exactly corresponding to that of fig. 10.

Fig. 12. Once the Aurignac date is accepted, this example will be readily seen to represent the beginnings of the early Solutré style, thin leaf-shaped blades flaked all over both faces characterizing Solutré I. Further proof is afforded by Cissbury (pl. xxiii), and it will be observed that on practically every specimen from our two sites a certain part of the face is left without surface-flaking, which normally covers both faces at Solutré. This and the next specimen are accidentally broken, and many typical specimens from France show that this was a common misfortune in Solutré times. The broken lines show the continuation of the two sharp edges, but the exact outline and dimensions cannot be determined from the surviving portion, which is more finely flaked on the other and flatter face. The colour is pearl-grey with slight iron-staining; and the surface has minute striae as if sand had been passed over it under pressure. These markings have been repeatedly noticed by Dr. Sturge on a certain class of flints scattered over an area at Icklingham.[2]

Fig. 13. Part of a leaf-shaped blade carefully flaked all over both faces, but thicker than the typical Solutré blade, though fragments as thick and otherwise identical are in the British Museum from Laugerie Haute, a typical Solutré site. It is of a dark dove-colour and more lustred or chalcedonic than the last, and, moreover, has striae of a different character. The hard surface has been roughly scored by points of other hard stones acting under great pressure; and in this connexion it should be added that the iron-staining is slight.

Fig. 14. A bone piercer rubbed smooth except at the butt, and tapering to a point, found at a depth of 17 ft. The simplicity of the tool prevents any exact correlation with cave specimens, but may be due to the fact that, according to present evidence, bone was hardly worked at the date of Le Moustier. In Aurignac times the industry was largely developed and wonderful carvings in the round were produced; nor is it impossible that the polishing of bone suggested the same treatment of flint.

[1] *Stone Age Guide* (Brit. Mus.), 2nd ed., p. 50.

[2] *Proc. Preh. Soc. E. Anglia*, i. 80, 91; *Proceedings*, xxiii. 240.

Fig. 15. Two views of a bone rod, slightly curved, and polished all over. It has been considered a smoothing tool, but its form is elementary, and the determination of its exact use is not essential. It was found at a depth of 35 ft.

Fig. 16. A polished celt of basalt or greenstone, which more than any other specimen has influenced the verdict on Grime's Graves and Cissbury. Palaeolithic forms might be recognized again and again, but a polished celt barred the way to a palaeolithic date. It was found in one of the galleries on the floor of Canon Greenwell's pit (p. 147), and cannot well have been a later introduction, though recently doubts have been cast on the *bona fides* of the workmen. Canon Greenwell's testimony is explicit, and Dr. Sturge's inquiries have only confirmed the authenticity of the celt. Further excavation of the pits would no doubt set the matter at rest, but at present it must be regarded as unique among the finds on both sites; and the most plausible argument against their palaeolithic date must be met. Recent investigations in Norway (p. 148) have shown that axes of the same material but of rougher form, some merely chipped and others partially ground into shape, were produced at least as early as the kitchen-middens of Denmark. Whereas stones of this character are best ground into shape, flint can be easily chipped, but polished only with difficulty.

The butt is pointed and the section nearly a circle at the centre: the cutting edge is, as usual after being used, unsymmetrical, a small fracture at the angle having left traces in the wall-markings made with this implement in excavating the chalk. Celts of this material are common on the eastern edge of the Fens and abundant in Yorkshire. A fragment much weathered has been found on the slopes of Cissbury, and a roughly shaped lump as well as a polished celt came from Torbryan Cave, near Denbury, Devon.[1]

A few Weeting specimens, among those collected by Canon Greenwell from the vicinity of Grime's Graves, may be mentioned here, though there is little to prove that they are of the same date as the pits. The abundance of typical specimens in the neighbourhood of the Cissbury pits, however, suggests that the surface finds are largely contemporary, and there is some internal evidence to the same effect. Perhaps the most attractive example is a small leaf-shaped blade flaked all over one face exactly in the Solutré manner. This face is fresh-looking and almost black, but there is a large patch of gloss (as on many Savernake palaeoliths) in the centre, that indicates great antiquity. The other face is a plain fracture with bulb at the end, and is bluish white, the patina being pronounced and lustrous. The two faces were evidently produced at different periods, separated by a considerable interval, but whether the later work dates from Solutre or neolithic times is at present an open question. A curious specimen in black flint, resembling a barbed lance-head, 3·1 in. long, might well be suspected of being later than the pit, if there was not a larger example extant

[1] *Stone Age Guide*, 2nd ed., p. 73.

from Cissbury (now in Dr. Sturge's collection). What seems to be a third example, 6¼ in. long, was found in Dépt. Eure with a flint tool that has the appearance of a blunt-nosed plane, but with much of the crust remaining and a constriction or waist near the centre (as fig. 39).[1] The coincidence is striking, but parallels from any site otherwise dated have yet to be found.

The significance of artistic carving at Grime's Graves could not be appreciated till Piette proved a succession of phases in palaeolithic art. It is now generally accepted that carving in the round dates from the Aurignac stage, and was followed first by carving in relief and subsequently by engraving.[2] Neolithic man has so far given no evidence of artistic capacity at all comparable to that of the palaeolithic troglodytes; and now that other arguments are available, there can be little hesitation in assigning to the Aurignac stage a *glans penis* carved in chalk, measuring 1 in. each way, and found in the pit at Grime's Graves at a depth of 31 ft., not far from chalk fragments that have been taken to represent part of a human fore-arm and finger. It is possible that these belonged to a life-size statue, and something of the same sort was found at Cissbury (p. 124). Representations of the human form (especially women) on a much smaller scale are remarkably common at this period, the material employed being generally mammoth ivory.[3] The exaggeration of the sexual characteristics in these statuettes has been constantly remarked upon, and a close parallel in reindeer-antler, suggesting the complete form of the Grime's Graves specimen, has been published from Gorge d'Enfer, Dordogne, one of the best-known stations of Aurignac date.[4]

Other objects in chalk are hollowed lumps that have been very reasonably taken for lamps, for use in the galleries of the mine, as again at Cissbury (p. 121). The cave-dwellers of the Dordogne adopted a similar method of lighting, and prehistoric examples have been recently brought together by Dr. Baudon.[5]

In 1868 Col. A. H. Lane-Fox (afterwards Gen. Pitt-Rivers) read to this Society an account of his excavations at Cissbury,[6] which hardly reached the high standard set by himself. In fact, the exploration was only superficial, and failed to disclose the nature of the pits. There were surface indications of about

[1] Both are figured by M. Léon Coutil in *Bull. Soc. préh. de France*, 22 Dec. 1910.

[2] *Stone Age Guide* (Brit. Mus.), 2nd ed., p. 61.

[3] Piette, *L'art pendant l'âge du renne*; *L'Anthropologie*, 1895, p. 129; R. R. Schmidt, *Zeitschrift für Ethnologie*, 1911, p. 968.

[4] Girod and Massénat, *Les stations de l'âge du Renne*, pl. i, fig. 3, where the locality is given as Laugerie Basse. An engraving of the corresponding organ has been found at the Blanchard rock-shelter, Sergeac, Dordogne.

[5] *Bull. Soc. d'études hist. et scient. de l'Oise*, vii (1911).

[6] *Archaeologia*, xlii. 59, pl. viii.

fifty of these on the western slope of the hill within the rampart of the earthwork. The smallest were barely noticeable, and the largest were about 70 ft. in diameter and 12 ft. deep; but the chalk filling was mistaken for the true floor of the pits, and the conclusions drawn were considerably modified on a later occasion. The plate, however, gives an excellent representation of a number of flint implements which were found during the work and subsequently presented to the Christy Collection now at the British Museum (all except his figs. 20 and 22).

Thirty of these depressions on the chalk down were opened in 1867–8, and perhaps the most important item was part of a polished flint celt (the butt end, fig. 15 on his plate), which was lying only 1 ft. from the surface. This is expressly said to have been the only polished specimen found in a total of about 600 flints.[1] The discovery led to some interesting speculations as to the validity of the distinction as a test of age; and it is only fair to say that the General recognized many resemblances to palaeolithic implements of Drift and Le Moustier types. He further remarked that round-scrapers (sometimes called 'thumb-scrapers', fig. 2 on his plate) were extremely rare from Cissbury, and that one face of a thin crescent-shaped blade (this fig. 20) was much glazed. This feature has since been observed on many specimens, and is particularly noticeable in palaeoliths from Knowle Farm Quarry, Savernake Forest.[2]

It did not escape his notice that one of his groups (figs. 10, 11 on his plate) 'closely resembling, if not facsimiles of, some of the implements found in the Drift, passed by imperceptible gradations into the celt type', broad and sharp at one end and pointed at the other (this figs. 17 and 18); and he conjectured that the hump or ridge observed on certain examples of this form was intended as a stop, to prevent the axe-head from splitting the handle (this fig. 17, and fig. 26 below). Special attention was drawn to the absence of arrow-heads or anything approaching that form of flint.

The fauna was returned as follows: *Cervus elaphus* (red-deer), *Bos longifrons* (Celtic short-horn), *Capra hircus* (goat), *Equus* (species of horse), and *Sus scrofa* (boar); no trace of *Cervus dama* (fallow-deer). The shells were *Littorina littorea* (periwinkle), *Cyclostoma elegans* (*Pomatias reflexus*), *Tapes decussatus*, and *Helix nemoralis*. But the value of the list is rather discounted by the shallowness of the pits as excavated.

Greater success attended the effort of Mr. Ernest Willett to unravel the

[1] Lord Northesk, who excavated here with Canon Greenwell, found another example (Evans, *Stone Implements*, 2nd ed., p. 801); and Prof. Boyd Dawkins mentions a possible third (*Journ. Anthr. Inst.*, xxiii. 249).

[2] *Proceedings*, xxiii. 457.

mystery of the pits in 1873 4.[1] Fired by Canon Greenwell's example in Norfolk, he tested one of the pits opened five years before, and found that the bottom was not solid rock but large blocks of chalk filled in with rubble, the true bottom being in this case 14 ft. below the surface.

Prof. Boyd Dawkins was also present at the opening of an untouched pit[2] on a subsequent occasion, the site being indicated by a depression of about 16 in. from the hill-slope. The solid chalk edge of the pit was reached at 5 ft. from the surface, and the following table shows the material passed through before the bottom was reached at a depth of 20 ft.:

	FEET
Surface soil	2
Chalk rubble, yellowish loam and charcoal, extending beyond mouth of shaft	3
Red earth, moist, and full of flints both worked and unworked	5
Chalk blocks, interstices not filled	3
Red earth, thickest in centre	3
Chalk blocks, interstices filled with rubble and loam	4

Scattered through the bottom layer were implements of red-deer antler (including a pick like those from Grime's Graves), *scapulae* of *Bos longifrons*, and one of the common pig, a few flint implements and broken flints. On the floor-level was a band of exceedingly fine flint, and a layer of inferior quality was noticed above, at a depth of 10 ft.

Mr. Willett classified about ninety worked flints from his pit as follows: 45 rough cores, 12 hatchets, 7 scrapers, 5 hammers, 12 wedges, and 12 used flakes. The hammers and wedges were found in close proximity, and appear to have been used for detaching lumps of chalk. In the first few feet from the surface the flints were patinated to a depth varying from the thickness of paper to one-eighth of an inch. Those in the red earth were only just discoloured, though coated with carbonate of lime; while the few found at 18 ft. below were nearly as fresh as the day they were made. Patination seems in this case to vary with the proximity to the surface, the upper face of the flint being more affected than the lower.

In January, 1874, Mr. Plumpton Tindale, F.S.A., opened another pit in the vicinity, but his death prevented a report by himself on the interesting discoveries that resulted. These were described to the Society from memory by Mr. Willett, and included both human and animal remains.

For the first 15 ft. practically nothing was found in the chalk rubble, but below that level were broken antlers and single tines of the red-deer. At about

[1] *Archaeologia*, xlv. 337 (read in 1875); details on pl. xxvi, and comparison of ground plan with Grime's Graves on pl. xxvii.

[2] These pits are located on the plan given in *Journ. Anthrop. Inst.*, vii, pl. x.

28 ft. two remarkably fine and perfect skulls of *Bos urus* (*primigenius*) were encountered, and in the rubble below, many bones of that animal, with others of the stag, otter, wild boar, and roe-deer; and it was observed that the antlers were mostly of slain deer. Flint implements occurred all through the deposit below the 15 ft. level, and one antler tool was pierced for the insertion of a stone. Four large pear-shaped lumps of chalk, about 3½ lb. each, were found pierced at the smaller end, also a lamp of the same material (fig. 17).

Mr. Willett remarked that the bones found in Mr. Tindale's pit were nearly all those of feral animals,[1] in contradistinction to those from Grime's Graves, which had been described as domesticated. His argument from the absence of pottery was nullified by subsequent discoveries, but he emphasized the likeness of several flints to Drift implements, and concluded that Cissbury mines were earlier in the neolithic period than Grime's Graves. It should be added that no galleries radiated from Mr. Tindale's pit, which was 39 ft. deep, oval and funnel-shaped, with a base diameter of 5 or 6 ft.[2]

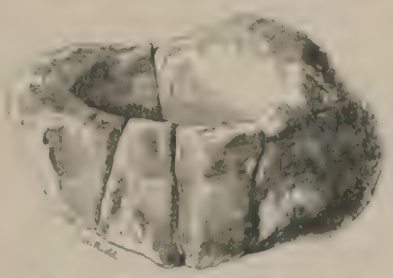


Fig. 17. Chalk lamp, Cissbury flint-mine. ½.

The animal remains from this pit were discussed in 1875 by Prof. Rolleston, who dwelt specially on the large proportions of *Bos primigenius* and the significance of its appearance with *Sus scrofa ferus* in what purported to be neolithic surroundings. On Prof. Boyd Dawkins's authority he subsequently added the *Bos longifrons*, goat, and dog.[3]

Partly in consequence of Mr. Willett's paper on the subject, the Anthropological Institute appointed a committee in 1875 to continue excavation on the site, the work being mainly in the hands of Gen. Pitt-Rivers and Mr. Park Harrison. The former, who was then president of the Institute, prepared a report,[4] in which he repeated his conviction that some of the implements were distinctly allied to palaeolithic forms.[5] Some at least of the pits were proved earlier than the Camp, and it was noticed that the chalk here reached the surface, there being no eocene clay overlying it. That there was clay of some sort at the surface is, however, stated in a subsequent passage, where a distinction was drawn between the red seam of the filling and that of the silting. This was

[1] *Journ. Anthrop. Inst.*, v. 364, 390, gives however the following list from this pit: *Bos primigenius* (large), roe, stag, wild boar, badger, *Bos longifrons*, goat, and dog. Prof. Rolleston's observations are in vol. vi. 21.

[2] *Ibid.*, vi. 268.

[3] *Ibid.*, v. 390; vi. 24.

[4] *Ibid.*, v. 357, plates xiv–xix.

[5] In this he was supported by Prof. Prestwich, who on the whole evidence, however, decided in favour of a neolithic date (*op. cit.*, p. 386).

pointed out by Prof. Prestwich, the former consisting of nearly unaltered clay 'as it is now seen upon the surface of the hill', and the latter being a mixture of clay and chalk in minute particles, as mixed by the action of rain-water. A letter from the Professor is appended to the report, and deals with this point as follows:

> The débris with which the shafts were filled had evidently been freshly removed, and at once used at the time of filling, as the blocks of chalk, had they been exposed to the air for even one winter, would have crumbled and fallen to pieces, and the small quantity of stiff red clay would have lost its pure colour and tenacious character. There seems to have been a little, but not much, weathering of the sides of the shafts before the filling up took place.

In view of the hard layers[1] here and elsewhere it is interesting to note that the rubble from Mr. Willett's shaft had weathered into a solid mass after being exposed on the surface for one year. The reporter advised caution in accepting as authentic the markings noticed at the entrance of two galleries, though he himself had seen some uncovered; and added significantly that several fragments of chalk appeared to have been scratched by animals.

The whole network of galleries was driven along the same vein of flint, which rises with the chalk towards the north at an angle of 5. Large quantities of broken flint nodules were found in the rubble, all too small or irregular for the making of a good implement, and all without exception of the 'unaltered blue' colour of the flint; but a few flakes were white like the surface finds. These flakes were supposed to have been exposed on the ground a long time before being thrown into the shafts along with newly excavated nodules, and the conclusion drawn was that these particular shafts were not the earliest on the site.

The shafts when dug were 17 ft. from the surface, and contained very few animal remains; pieces of antler could not be regarded as picks, and one piece of pottery, found in the clay above a shaft, was considered of later date. But in a large pit 66 ft. in diameter pottery was found at 13 ft. and 18 ft. from the surface below a red seam, one of the original vessels having been 9 in. in diameter at the mouth and 13 in. in diameter 2 in. below it. Both were coarser ware than that found at a higher level or in the ditch. In the red seam were found most of the animal remains, chipped implements and flakes, all sealed in by an original filling of chalk blocks; but rude implements occurred all through the filling. At 30 ft. was found charcoal, from furze, willow, and beech; and at the same level a chalk lamp with antler tools, one wedge being ground smooth all round. Another object of chalk was a disc 2–$2\frac{1}{2}$ in. across and about $\frac{3}{4}$ in. thick, with a central hole bored from both sides: this was found in the rampart, but another

[1] *Op. cit.*, pp. 365, 386.

occurred at Grime's Graves, 18 ft. from the surface; and there are others from Cissbury, as well as one from Dorset, in the British Museum.

The General amplified his excavation with experiments, and tested the efficacy of deer-antler tools and shoulder-blades of the ox as shovels, deciding against the latter in favour of the hands.

Prof. Rolleston's remarks on the animal remains discovered were as copious and systematic as usual, and were published with five views of the female skull.[1] From the 'large pit' he identified *Bos longifrons*, *Sus scrofa domesticus*, *Cervus elaphus*, *Cervus capreolus*, and *Capra hircus*, a skull of the last coming from the red seam, 9½ ft. from the surface. Bones of the roe, domestic ox, and goat were also found below the red seam. The presence of the pig and absence of the wild boar and *Bos primigenius* from the large pit induced him to date that and the skeleton pit a little later than Mr. Tindale's pit. The horse-bones were labelled 'superficial', as were all the remains of that animal at Cissbury.

The 'skeleton-shaft' proved incidentally that the pits were earlier than the ditch and rampart of the earthwork, and yielded, besides a woman's skeleton, a large number of animal bones and shells. About six pigs were represented in this shaft, the marrow-bones being mostly broken: the majority of the remainder showed ancient fractures, and the lower jaws were invariably broken. There were also traces of the goat, roe-deer, and *Bos primigenius*, but none of the red-deer or domestic ox; while the shells were *Helix nemoralis*, *arbustorum*, *lapicida*, and *rotundata*, *Zonites cellarius*, and *Cyclostoma elegans*, all found in great abundance, and below the red seam. The shells of the Cyclostomata generally had their opercula still connected.

The skeleton of a woman about twenty-five years of age was found in a vertical position head downwards, practically complete but mixed up with pig bones. It was surmised that she had fallen into the shaft and had not been properly buried. The stature was 4 ft. 9 in.; the shoulders and hips narrow and the head large and low-lying, the cubic capacity being 105 in. (1732·7 cubic centimetres), and cephalic index about 75. The skull was 2½ ft. from the floor of the shaft, which was unusually small (4½ ft. in diameter) and about 20 ft. deep, from the original surface.[2]

Being unsupported in that respect by his colleague, Mr. Park Harrison submitted a paper on the marks found upon chalk at Cissbury to the Anthropological Institute.[3] He described these markings as being on the jambs of entrances into galleries in three Cissbury shafts, and dwelt on their ancient

[1] *Journ. Anthrop. Inst.*, vi. 22. [2] Plan and section in *op. cit.*, pl. xv, p. 376.
[3] *Journal*, vi. 263; see further, p. 430.

appearance, in contrast to the date 1875 cut by a visitor since one of the pits was cleared. Mr. Tindale's pit also yielded a number of rounded chalk blocks pitted with small round holes and scored with lines. On one piece the lines crossed one another or radiated from small pits; and experiments with a dog and badger failed to produce anything similar.

In October, 1876, our Director joined Mr. Park Harrison in opening another pit (called the Cave-pit), adjoining Mr. Willett's excavation of 1874. At the top was a filling of chalk rubble with large blocks; next came a layer of red clay, sloping downwards from the eastern lip of the pit and containing an abundance of flakes and implements; and below, the usual filling of angular chalk. Several chalk-blocks with markings[1] were discovered, but none below a level of 15 or 16 ft. In the white seam were noticed two pieces of deer's antler and a considerable quantity of charcoal between 12 and 16 ft. from the surface. Lord (then Captain) Dillon was present when the first gallery was opened, and noticed several lines scored over the entrance; and over the entrance to another gallery was also a set of marks. A piece of stag's horn, 10 in. long, bore marks of fire and was supposed to have been used to stir the fire, but similar finds at Grime's Graves suggest that fire was used on antler instead of a saw. A piece of hard stone, $5\frac{3}{4}$ in. by $2\frac{1}{4}$ in., of a quartzite nature, was compared with a piece from Mr. Willett's pit.

Of the twenty-five implements found, one-third had one end sharply pointed and the other unworked. No sling-stones or potsherds were noticed, and the only shells were of *Helix nemoralis*, which occurred 4 or 5 ft. from the surface: bones, worked or unworked, were extremely scarce.

The concluding stages of this excavation were described by Mr. Park Harrison in a further paper,[2] which was furnished with a plan of the pits and galleries explored in 1876 and 1877. This 'Cave-pit' had been gradually filled in by natural agencies, the walls bearing marks of weathering.[3] Blocks were not (as in other pits) thrown in purposely, at least not till after the formation of the red seam which crossed the pit from east to west. Inside one of the galleries was found a block of chalk scored with deep parallel lines and 'bearing some remote resemblance to a rude human figure'. A horn pick, the second of its kind recovered during the exploration, was found in another gallery; and a fine hammer of deer's antler came from the filling of one of the shafts. Three blade-bones of small ox or deer were collected in the main gallery and one of its

[1] These are illustrated on his plate (xxv) and p. 440, this last being accepted as genuine by Pitt-Rivers.

[2] *Journ. Anthrop. Inst.*, vii. 412.

[3] Gen. Pitt-Rivers took a contrary view and saw no traces of habitation in the pits or galleries (*op. cit.*, p. 428).

branches, whilst nothing but two small bones of sheep or goat was noticed in any of the other galleries.

Another shaft was opened in September, 1877, which eventually yielded the second human skeleton (April, 1878). In it was found 'the usual red seam, due to the silting in of the clay which covers the chalk formation at Cissbury to a depth of 7 or 8 inches'. At 8 ft. from the surface it divided into two branches, one extending nearly across the pit and the other continuing at a sharp angle towards the bottom. Rudely made implements with a blade-bone of deer or small ox were noticed between 8-10 ft.; and a pile of flint chippings and flakes occurred in the red seam. Charcoal appeared in the centre at 15 ft. from the surface; and a fine wedge, a pick, and three tines of deer-horn came from the lowest level, apparently in the galleries. At 7 ft. above the floor (20 ft. from the surface) occurred red-deer antlers, and 3 ft. below them remains of the goat. At 16 ft. was part of the lower jaw of *Bos longifrons*; and perhaps at 11 ft. part of the femur of a domestic pig. Flint implements occurred throughout the filling.

Prof. Rolleston also reported on the second skeleton, which was recovered almost perfect and proved to be that of a male between twenty-five and thirty years of age who had been formally buried 16 ft. from the top of the pit and 14 ft. from the bottom.[1] The section was approximately as follows:

16 ft.	Surface. Chalk blocks, about 2 ft. Red seam, horizontal. Filling of chalk rubble. Red seam, rising from centre and joining the upper red seam at circumference. Chalk rubble, 2 ft. thick.
14 ft.	Skeleton, laid on red seam. At 20 ft. several pieces of antler scorched and smoked, with burnt chalk, on north side; on south side, about 5 ft. above the floor, four masses of iron pyrites, one flint implement (point missing); and hard by, 300–400 flakes. Filling of chalk blocks, more or less cemented. Floor of the shaft.

The body had been laid on its right side facing the east, in a contracted position with the knees about 6 in. from the chin, the lower legs bent back on the upper, and the fore-arms at right angles to the axis of the body. In front of the knees (or, as Mr. Harrison states, near and in front of the head was a large flint hand-axe of oval contour, marked C on the photograph of the burial. Eight snail-shells (*Helix nemoralis*) and a burnt pebble had also been placed

[1] *Journ. Anthrop. Inst.*, viii. 377; vii. 431.

with the body, and chalk blocks and unworked flints had been arranged round it to form a sort of tomb. About 2 ft. of rubble, containing six implements 4–5 in. long near its left shoulder, had been heaped over the interment. From the top of this rubble started the middle red seam found in this shaft.

'This seam was to the eye just like the red layer found capping the natural surface of the Downs; and the two deposits might therefore, with considerable probability, be considered to have been formed in the same way.'

Examination of the skeleton showed that the subject had suffered from hemiplegia (infantile paralysis), and the climbing muscles were well developed, perhaps by going up and down the shafts. The stature computed from the femur was 4 ft. 9 in., but measured by the bones when properly arranged half an inch short of 5 ft. The cephalic index was 71 (very dolichocephalic), and the cranium and lower jaw especially contrasted with those of the female skeleton. Full details are furnished by Prof. Rolleston.

The mass of material from Cissbury in public and private collections[1] can merely be dealt with in outline; and, in a paper not entirely devoted to the flints, only some of the leading types can be illustrated. These are naturally such as show most secondary chipping and careful finish, but there is a large and growing series of roughly dressed stones which readily fall into groups and have an interest of their own: for instance, the thick flint of circular or oval outline, with two flat faces (the upper generally retaining the crust), steeply bevelled all round the edge. This type is well illustrated in the British Museum by specimens from the Aurignac cave itself; Les Eyzies, Dordogne; Vellèches and Navclière (Coussay-les-Bois), Vienne; and Dr. Sturge has one from the pit workshop at Cissbury. When not otherwise stated, specimens in the following list are in the British Museum.

Fig. 18. A long plane with rough fluting at the end and the sides trimmed for handling. Longer than Aurignac planes from French caves, it still has much in common with the earliest finds at Les Eyzies (British Museum).

Fig. 19. A prismatic tool, carved and pointed. The section is triangular, and the type has been found repeatedly in England. Good evidence of date is afforded by its occurrence in the earliest stratum of Les Eyzies.

Fig. 20. Two end-scrapers or planes, being clear examples of Aurignac side-trimming. This is a leading characteristic of the period, and can be easily recognized on scrapers and other tools made from blades. The larger specimen has been worn smooth by use at the broader end (Brighton Museum).

[1] Dr. Sturge has a large series as well as the remainder of Canon Greenwell's collection from Grime's Graves; and Mr. Garraway Rice, F.S.A., Mr. Thos. H. Powell, and other gentlemen kindly exhibited selections from their cabinets in illustration of the paper.

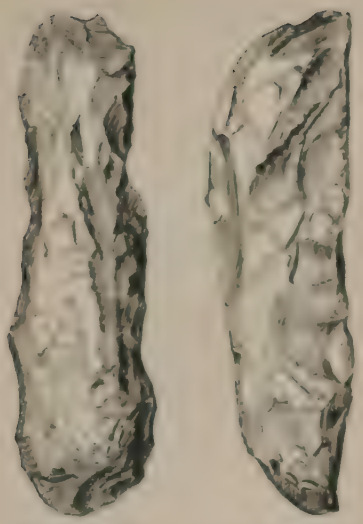


Fig. 18. Flint plane, with side view; Cissbury. ½.

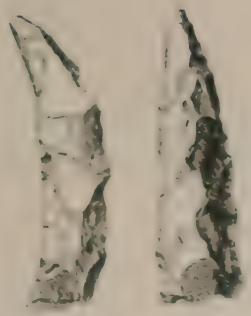


Fig. 19. Prism tool, side and top views; Cissbury. ½.

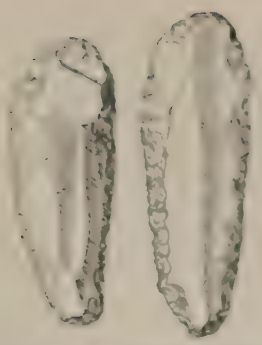


Fig. 20. Two blades with trimmed edges; Cissbury. ½.

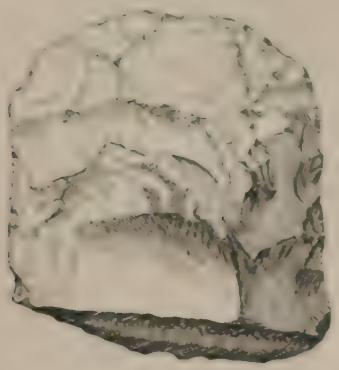


Fig. 21. Tool like end of celt: Cissbury. ½.

Fig. 22. Chisel, with section; Cissbury. ½.

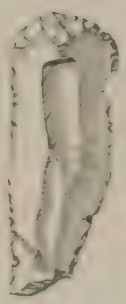


Fig. 23. End-scraper; Cissbury. ½.

Fig. 24. Fluted plane, with side view; Cissbury. ½.

Fig. 25. Flint chopper, with side view; Cissbury. ½

Fig. 21. A well-made tool resembling the end of a large celt, but probably complete in itself and not accidentally broken across. The fracture may be due to an attempt to obtain the rounded angle known as hinge-fracture, so that it might be used as a chopper without injuring the hand. For a smaller specimen see fig. 5. Most of this pattern are carefully flaked on both faces, and have a flattish base in the form of a long-pointed oval.

Fig. 22. A carefully made tool, fractured (intentionally?) at the butt and flaked all over both faces. The sides are parallel and sharp like the rounded end. It has been called a chisel, but was evidently not meant for heavy work. An interesting parallel was found in a stratified deposit at Ipswich by Miss Nina Layard (p. 133), the work being coarser and probably earlier.

Fig. 26. Cissbury celt with lump on one face (front and side). $\frac{1}{2}$.

Fig. 27. Side-view of scraper; Cissbury (pl. xxii, fig. 6). $\frac{2}{3}$.

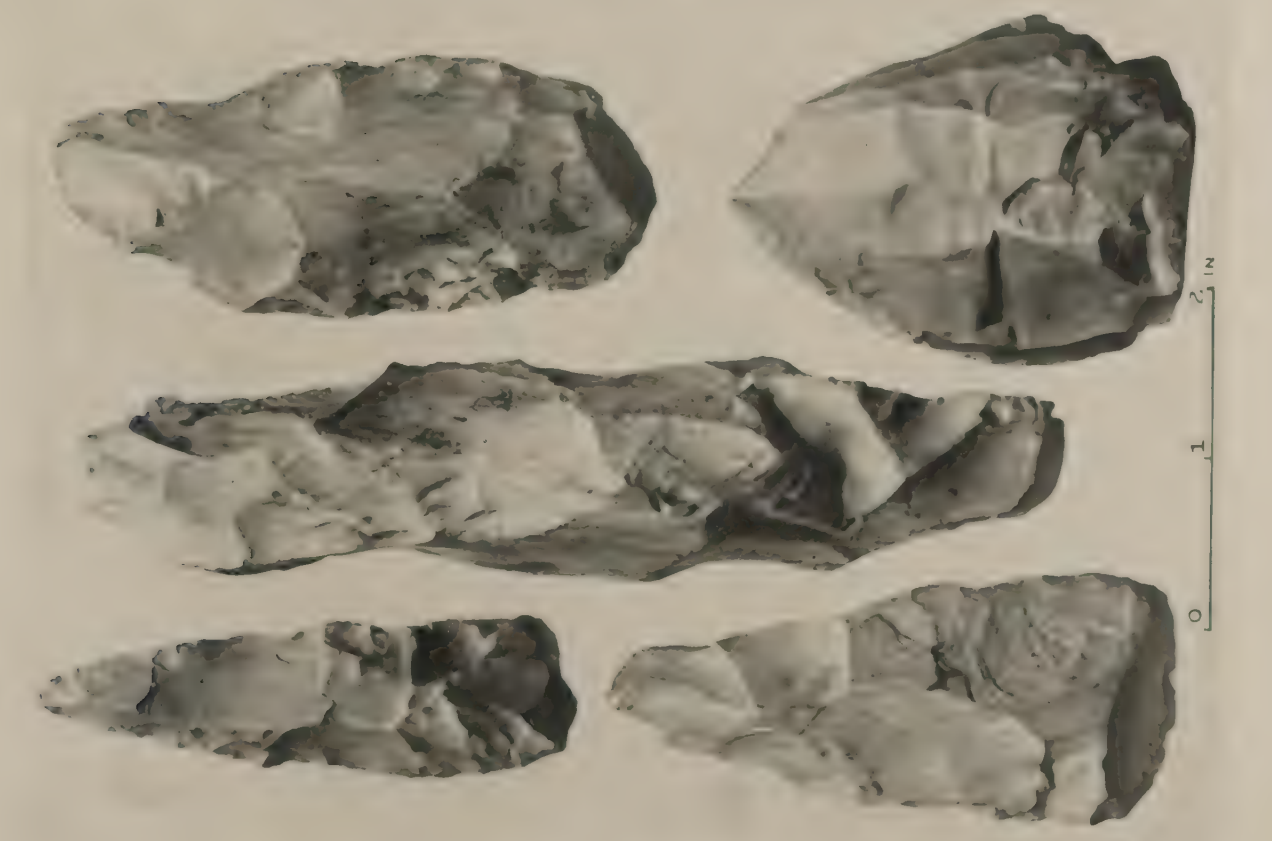
Fig. 23. Perhaps the commonest form of scraper in the Cave period: a blade with two ridges and rounded end, the butt being left untrimmed (Mr. T. H. Powell).

Fig. 24. A good example of steep fluting in the Aurignac manner: a plane with the under-face flat, the thick end rounded, and one side trimmed from end to end. This serves as a connecting link between the forms represented in figs. 35 and 18.

Fig. 25. A chopper with crust reserved on the thick end to prevent injury to the hand in use. Such massive tools are known from Le Moustier, and also from the river-gravels, especially in north-east London. Except for the crust, the surface is quite white; and, though the top is sharp, the principal cutting-edge is along the left-hand side.

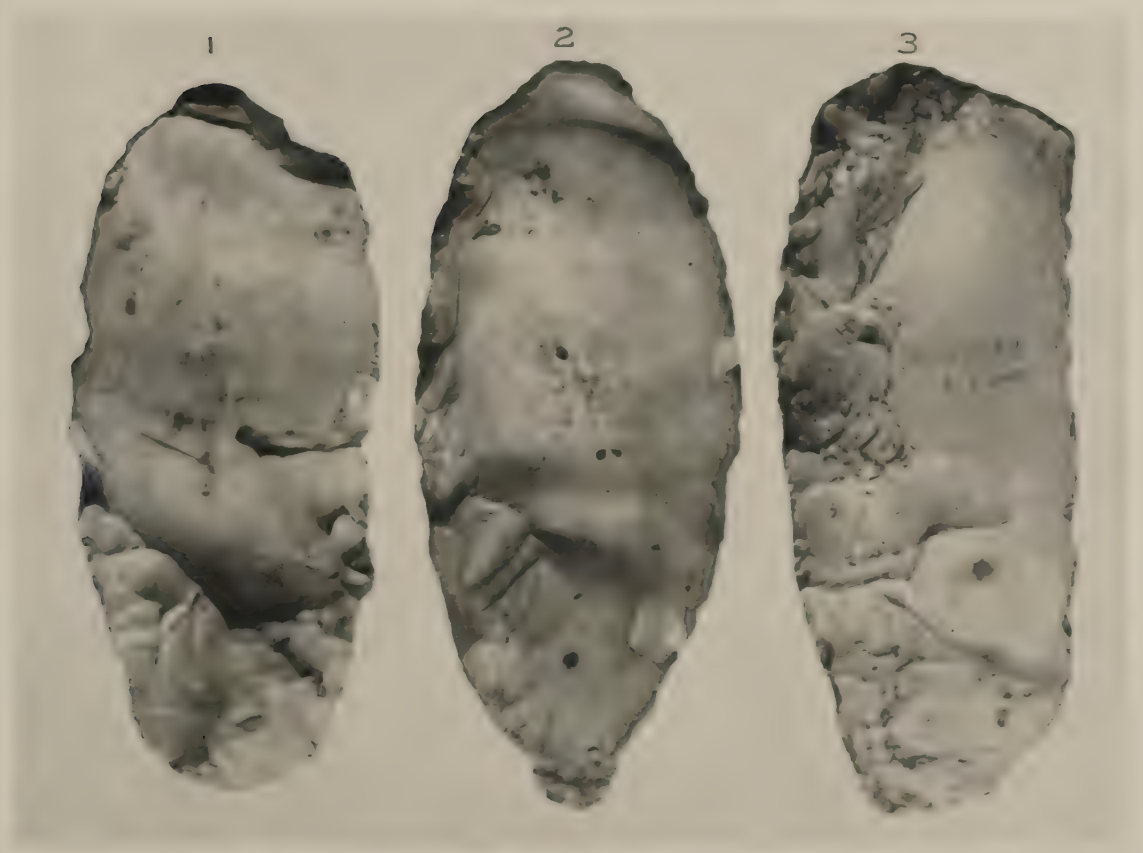
Fig. 26. Here may be mentioned a curious feature that seems to have answered some definite purpose and can hardly be accidental. About the middle of one face of a few Cissbury celts is a large chipped lump. The obvious suggestion that the

Flint implements, Cissbury, Sussex (British Museum)



Flint implements, North of Ireland (British Museum

Published by the Society of Antiquaries of London, 1912



THREE SPECIMENS OF PARTIAL SURFACE-FLAKING. CISSBURY
(FRONT AND BACK VIEWS)

Published by the Society of Antiquaries of London, 1912

implement was never finished is discounted by the repeated occurrence of this protuberance, which is thought by some to imply a certain method of hafting, and to correspond to the stop-ridge of a bronze palstave. An interesting parallel is in the collection of Rev. H. G. O. Kendall, a palaeolithic date being indicated by its provenance. It is a typical Cissbury celt with protuberance on one face, except that it has been stained pale yellow by iron in the gravel of a pit that is well known for its Drift types, surface scratching, and glossy specimens.[1] It should be noted that the Brighton Museum also contains some Cissbury types from Knowle Farm Quarry, Savernake, e. g. the long oval with square ends, the thick sub-triangular hand-axe, and small thick ovate implement.

Fig. 27. Side-view of the end-scraper shown on plate XXII, fig. 6, with steep fluting at the end and partly along the sides. The under-face has a large bulb and is curved, but quite plain. This is one of the most characteristic forms in the series, and is not known to occur at any other horizon. Like nearly all the Cissbury specimens it is white, and the surface has been extensively scratched or rather torn. This condition need occasion no surprise, as the flint is softened to a measurable depth; but this soft surface is in fact generally intact.

Plate XXII.

Fig. 1. A large white flake, bluish in places where the black core shows through the white film of patina. Though of unsymmetrical outline, this is a good example of surface flaking, which reached its climax at the Solutré stage.

Fig. 2. A flake used as a side-scraper (*racloir*), trimming and use having rendered the working-edge steep. The under-face is quite plain.

Fig. 3. A round-scraper made from a thin flake: the type is rarely found at Cissbury, though larger specimens occur at Grime's Graves. It is also comparatively rare in the Aurignac series, scrapers of this outline being generally thick.

Fig. 4. A well-flaked example of the so-called 'celt-end', which may be the correct description in this case as the base seems to be due to an accidental fracture. The sides are parallel, and the surface flaked on both faces, which are equally convex.

Fig. 5. A broad white flake, used as a scraper along one side and at the narrower end: the style is rather that of Le Moustier, but a simple tool of this kind may be found at most periods and is not specially characteristic of any.

Fig. 6. See above, fig. 27.

Plate XXIII.

Fig. 1 *a*, *b*. Two faces of oval tool with surface fluting at the narrow (working) end, and surface flaking over part of both faces, suggesting the beginnings of Solutré work. From a pit opened by Mr. Willett.

Fig. 2 *a*, *b*. A symmetrical 'point' of laurel-leaf form as at Solutré, but the surface flaking only partial and not of the finest quality. Specimens of this form with the same coarse work have been collected at Laugerie Haute, one of the best sites of the Solutré stage.

[1] *Proceedings*, xxiii. 457.

Fig. 3 *a*, *b*. An irregular flake partially flaked on both faces in a style suggesting rudimentary Solutré work. This and fig. 2 are from pits reopened by Gen. Pitt-Rivers (then Lane-Fox) in 1868.

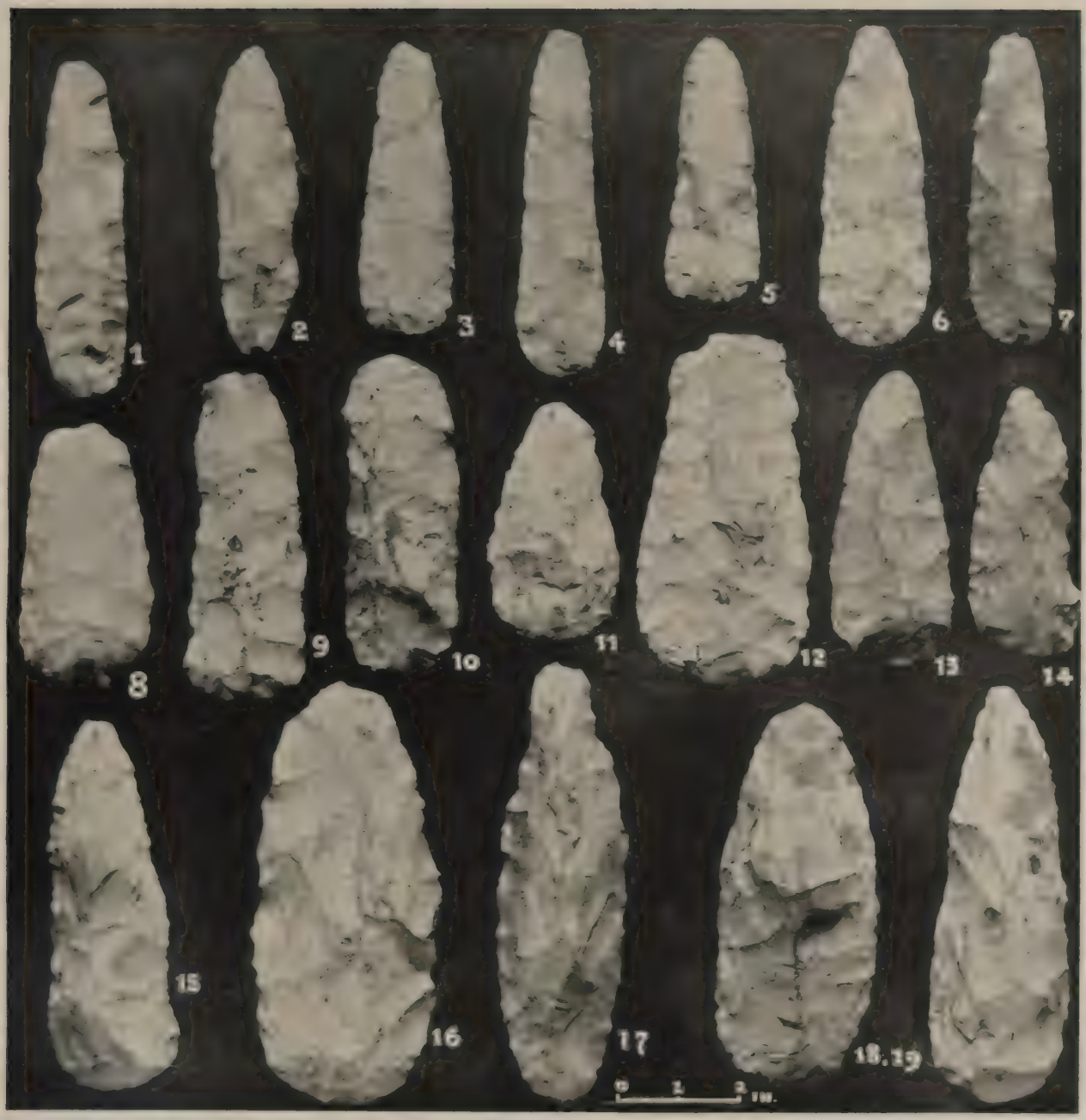
PLATE XXIV.

This plate gives all the complete celts in the British Museum from Cissbury, and comprises several varieties of a type generally considered neolithic. They are all flaked on both faces and are more or less sharp all the way round, like many hand-axes of the St. Acheul period, from which these seem to be descended. The type has been found in stratified deposits in this country, but not accepted as palaeolithic merely on account of its close resemblance in outline to the polished celts of neolithic age. An interesting find near Paris is quoted below (p. 133) to illustrate the succession, if not the actual dates, of these 'celt' forms, and the coincidences already noticed apart from this form of implement should justify the inclusion of the celt among the Aurignac types, at any rate in Britain and North France.

Examples of the Cissbury type of celt have long been recognized from other parts of England. Sir John Evans[1] mentioned specimens from Reach Fen (his fig. 23) and Burwell Fen, Cambs.; Thetford, Norfolk; Mildenhall, Suffolk; Witham, Essex; and Farnham, Dorset. Eight were found lying side by side just below the turf on Clayton Hill, Sussex, in 1803, including one 13 in. long; and four were found lying in a row at Teddington, Middlesex. The discoveries at Cissbury are discussed at some length (Evans, p. 78, figs. 20 20), and one of the lesser-known forms described as wedge-like with the thin end rounded, and well adapted for use as a chopper, though the rounded edge is uninjured. To judge from shape alone this and others 'might be regarded as being of palaeolithic age, but their surroundings prove them to be neolithic'. This constant recognition of palaeolithic forms apart from the river-gravels suggests a closer examination of the 'neolithic' surroundings.

An instructive find at Bromehill pit, in Weeting parish itself, is recorded by Evans (fig. 438), and throws some light on the antiquity of the Cissbury type of celt. In the gravel, of which the base was 6-8 ft. above the Little Ouse and the entire height about 24 ft., have been found remains of the mammoth and horse, and at least one narrow celt $5\frac{1}{2}$ in. long with one face much more convex than the other, the broader end being gouge-like. Another, with the same peculiarities but somewhat broader, is lustrous and nearly white (Evans, fig. 420), and comes from Icklingham (Rampart Hill), as does a third (Evans, fig. 422) which is also said to approach the neolithic form, such as his fig. 16, from Newhaven, Sussex. A specimen of the same character (Evans, fig. 440) was probably found at Gravel Hill, Brandon, opposite Weeting; and another, 'of

[1] *Stone Implements*, 2nd ed., pp. 75-6.



FLINT CELTS, CISSBURY, SUSSEX (BRITISH MUSEUM).

Nos. 1-8, 11, 13-15, 17 and 18 were found in the pits [nos. 9, 10, 12, 16 and 19 at various points in the circle of the earthworks and at the intersection of two].

Nos. 8, 13-16 and 19 were excavated by the Anthropological Institute committee in 1876 [as recorded by Gen. Pitt-Rivers (then Col. Lane-Fox) in 1867-8].

palaeolithic type, which not improbably may have been derived from some gravelly bed,' was found on the surface near Henlow, Beds. (Evans, p. 530).

One of the leading Cissbury types is a segment of a circle, thickest at the base, which is flat and enables the implement to stand up much like a 'tea-cosy', to which another series from Icklingham has been compared by Dr. Sturge. The edge is generally sharp throughout its length, and a frequent feature is a long hinge-fracture on one side of the base, which obviates at least one of the sharp edges that might hurt the hand in use. This mode of fracture was evidently appreciated and seems to have been intentionally produced; but unless Aurignac man had the secret of producing it at will, it is likely that he continued fracturing flints till he got a straight 'hinge', and then chipped a curved edge to suit it. Whatever the process, the type can be traced through several stages of development, from stratified deposits to the age of polished flint.

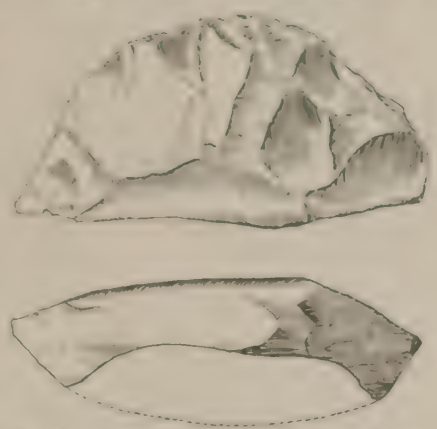


Fig. 28. Segmental tool, with view of base, from combe-pool, Northfleet, Kent. ½.

The relation of this type to the river-gravels has recently been illustrated in an interesting way, in accordance with evidence from elsewhere. In March last Mr. Dewey of H.M. Geological Survey took from the 'bull-head' of the Southfleet pit (or Baker's Hole, Northfleet, Kent), where it lay imbedded 6 in. deep, a flint segment 4¾ in. long with a cutting edge round the curve and a flat base with hinge-fracture along one side (fig. 28). One face has primary flaking all over, the other has a large patch of crust covering the sunk portion that might otherwise be taken for a subsequent break. The dotted line shows the form of a normal base, but this seems to be an early example of the type, to judge from the workmanship; and if the date arrived at on other grounds for this site is correct,[1] this segment should date from the stage of Le Moustier, inasmuch as the deposit was due to extreme cold not long after a mass of Levallois flakes had been worked a few yards off in the same pit. This specimen is a most opportune find, and has been presented by Mr. Dewey to the British Museum.

The next link in the chain is a large example (fig. 29) in the same collection from the cave of Les Eyzies in the Dordogne, where many other parallels have been found; but all these point to an Aurignac date, and it seems clear that Lartet and Christy found a level below that which is generally held to mark

[1] *Archaeologia*, lxii. 520. Dr. Sturge has a typical Northfleet implement from Weeting, Norfolk, with the large butt reduced by chipping. A typical flat 'pick', 4¾ in. long, said to have been found below combe-rock in Selsey, has been published by Mr. Heron-Allen (Selsey, *Bell*, p. 72, pl. xiv.

the transition from Solutré to La Madeleine. This segment has breccia still attached to it, the flint being somewhat yellow; and is a further indication that Aurignac man was using exactly the same forms of tools in France and England. One in Dr. Sturge's collection is 5 in. high, the base measuring 5½ in. by 1¼ in. It was found 3–4 ft. deep at Nowton, south of Bury St. Edmunds, and doubtless belongs to the Aurignac stage.

Another, roughly flaked only on one face, has been already described from Grime's Graves (fig. 3), and a smaller one has recently been found in gravel

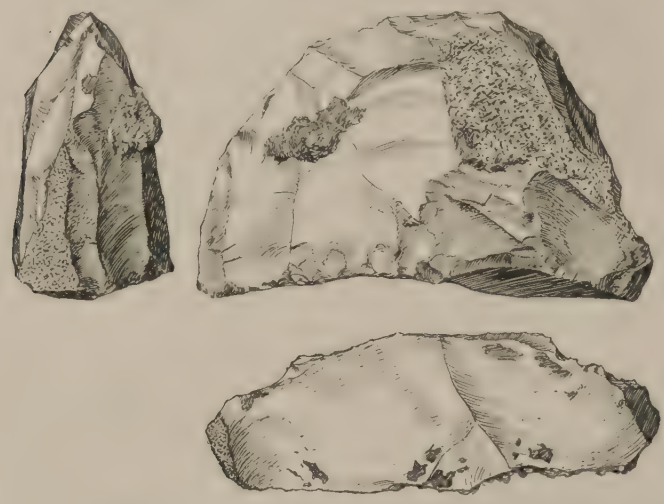


Fig. 29. Segmental tool, end, side, and base views; Les Eyzies Cave, Dordogne. ½.

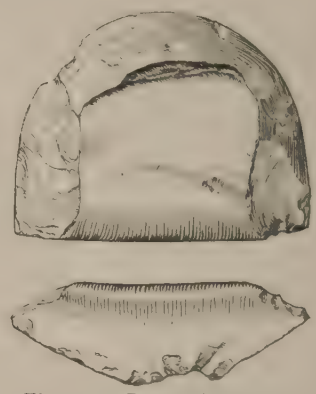


Fig. 30. Polished segmental tool, with view of base; South Downs, probably East Dean. ½.

on the 100 ft. terrace at Greenhithe. One from the surface of the chalk in Dorset is in the British Museum, and the discovery of a certain number with crust over a part or the whole of the base proves that they are not broken tools. The so-called 'ends of celts' seem to be related to these segments, and are likewise complete tools (figs. 5, 21). An interesting question is raised by a polished specimen in Mr. T. H. Powell's collection (fig. 30). The cutting edge is flaked and reduced by grinding to a sharp even line, and the base has the hinge-fracture along one side, the production of which spoilt the symmetry of one face. The practice of polishing flint is generally considered purely neolithic, but it is open to question whether the cutting-edge of tools was not produced in this way long before, especially as polished bone-tools date from an early part of the Cave period. The point will be touched upon again (p. 147); and if the present specimen is neolithic, the persistence of the type from Aurignac and probably Le Moustier times is only the more remarkable.

Some interesting discoveries throwing light on the Cissbury problem have

been made by Miss Nina Layard at Ipswich, but not fully published.[1] From drawings and diagrams kindly lent for examination, it is clear that there is a sequence of palaeolithic horizons on this site, and in the upper part of this section, in stratified deposits quite distinct from the soil, were found various forms highly suggestive of Cissbury, particularly a 'chisel' with rounded end and parallel sides much like fig. 22. The peculiar fluting appears on other specimens, and one of the sketches represents the type wrongly described as the broken end of a celt (as figs. 5, 21).

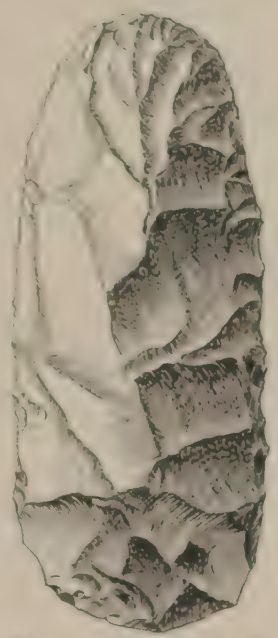


Fig. 31. Celt, Dauphin pit, Ivry, near Paris. ½

Certain finds in France must here be noticed that have an important bearing on the stratigraphy of the Cissbury type of celt. In 1866 Gabriel de Mortillet figured three typical implements from various strata at Menchecourt, near Abbeville, viz. a lanceolate hand-axe from the lower beds; a long oval implement evidently allied to the Cissbury celt, from the *terre rouge* or loess; and an ordinary polished celt from the rainwash overlying the preceding stratum.[2] Boucher de Perthes had several others from the same neighbourhood, and a still more striking example has recently been found by M. A. Laville,[3] who has kindly permitted its reproduction here (fig. 31). Though not found *in situ*, it evidently came from a coarse sand-bed in the Dauphin pit at Ivry, and may be described as a flint celt 7 in. long, with a dirty white patina stained yellow on one face, and on the other greenish yellow, also bluish in places, recalling that generally seen on specimens frankly palaeolithic. The form of this axe, with a cutting-edge all round, so closely resembles the neolithic celt that at first sight and apart from its horizon one could believe it to be neolithic, but it is quite palaeolithic.[4] The stratum is 5–8 ft. thick, and below it is a seam of pebbles, gravel, and sand, with remains of mammoth; above it, compact clay 2 ft. thick, and then grey loam with numerous flint flakes and fossils. Beneath the humus is a layer of clayey loam of a deep greenish yellow. From a study of several other pits in the neighbourhood of Paris M. Laville has been able to distinguish an infra-neolithic horizon,[5] and it is interesting to observe how the above celt was

[1] *Journ. Anthrop. Inst.*, N.S., vi. 43.

[2] *Matériaux pour l'histoire de l'Homme*, ii. (1866) 358: the lower beds are 'sable gras, sable aigre et cailloutis'.

[3] *Bull. et Mém. Soc. d'Anthrop. de Paris*, 5th ser. i. (1902) 209, fig. 3.

[4] In support of this may be mentioned a similar celt in Dr. Sturge's collection from the well-known palaeolithic site at Bromehill, Weeting, Norfolk.

[5] *Congrès internat. d'Anth. et d'Arch. préhist.*, Paris (1910), p. 203.

received by experts at the last Paris Congress. Adrien de Mortillet considered it neolithic, Cartailhac bowed to the stratigraphical evidence, and the Abbé Breuil noted sites in N. Aisne where picks and *tranchets* (kitchen-midden type) had been found with no trace of polishing in pleistocene loams. Other stratigraphical evidence with regard to the two last-named types will be referred to below, but an earlier date is claimed for certain finds at Allonne, near Bracheux, Oise.[1] On the north slope of the cliff on the right bank of the Thérain is a thick deposit of pleistocene drift 167 ft. above the sea; and here at 20 ft. from the surface were found a pointed implement 8 in. long (regarded by Dr. Baudon as St. Acheul I) and a long oval implement with cutting-edge all round, $1\frac{1}{2}$ in. thick at the centre, and 'of rare form but remarkably regular'. This appears from the illustration to be the prototype of the Cissbury celt, and 8 ft. above it, at a depth of 12 ft., was found a pointed type regarded as St. Acheul II, but perhaps connected with the leading type of La Micoque. In any case, the hand-axe was found above the long oval specimen in the same pleistocene deposit.

Other parallels from France may be mentioned which are not dated by stratification, but are even closer to the Cissbury deposits, and show that the culture was not confined to this side of the Channel. MM. Martin and Hue have described a 'factory' situated in a loop of the Marne, commune of Jablines, Seine-et-Marne.[2] The material mostly used was a brown local flint (*silex ménilite*), rarely black, but a few 'of La Madeleine type' were found with a white patina all over, and black flint with deep white patina is frequently found on the surface in the same neighbourhood. The celt-type was a thin oval, ranging from 2 to $5\frac{1}{2}$ in. in length, with sinuous edges; three specimens were slightly polished near the cutting-edge. The authors and Dr. Baudouin agreed that these were never intended to be polished all over, but were finished tools. Among the illustrations should be noticed a celt of Cissbury type, $3\frac{3}{4}$ in. long; a pointed oval tool, $4\frac{1}{4}$ in. long, with flat faces; and a segmental specimen with base reworked, $3\frac{3}{4}$ in. long, but not so regularly formed as usual. The paper also contains some interesting reflections on the neolithic period, which is said to be one of the least known and most obscure. The problem is complicated by the abundance of Campigny finds north of the Loire and their absence in the south, where cave-deposits might have determined their true horizon. No connexion can be detected with the Tardenois culture, and whereas Jablines yielded no kitchen-midden celts or transverse arrow-heads, there was an implement of much the same character as the Campigny pick. But there seems little or no reason for placing Jablines a little after Campigny, as the authors are tempted to do.

[1] *Congrès préh. de France*, Autun (1907), p. 94, esp. fig. 10.

[2] *Ibid.*, Beauvais (1909), p. 254, plates i–vi; partial polishing is mentioned, p. 264.

Another 'factory' has been discovered at La Longère, Eure-et-Loir, and among the finds illustrated may be noticed three that agree well with the Cissbury culture, viz. a long celt very much patinated, 7 in. long; a plane, 3⅝ in. long; and what may be a lamp. The palaeolithic appearance of the finds was duly noticed, but a neolithic date eventually decided upon; and it was noticed incidentally that the iron-stains were found not only on surface flints that might have been touched by the plough, but also on pieces deeply buried. The cause assigned was the oxidation of pyrites, and the same was noticed by Capt. Wade in excavating a flint-mine near Chichester.[2]

An examination of the types associated with Cissbury and Grime's Graves has revealed various palaeolithic traits; and evidence from France, stratigraphical and otherwise, lends colour to the theory that the horizon is palaeolithic. Acceptance of the theory involves in the first place the recognition of palaeolithic flint-mining, an achievement which, in itself and apart from prejudice, is just as credible in the early as in the later Stone Age. Even if the mines are attributed to Aurignac man, it might be contended that the surface finds of that period cannot have escaped disturbance or even destruction in subsequent ages; yet many surface-finds in the vicinity of the pits both at Cissbury and Grime's Graves are evidently contemporary with those obviously left behind by the miners. Nor should this appear extraordinary, for many collectors have surface specimens of the river-gravel types much older than the Cave period and possibly not *in situ*, but still not damaged to any extent, the patina being generally grey or white with more or less iron-staining. If St. Acheul types can still be detected on the surface both here and abroad, there should be no *a priori* objection to Cave specimens from the surface; and the true horizon of the latter would have been recognized long ago but for two ill-founded generalizations, viz. that surface finds were exclusively neolithic, and palaeolithic flints were normally patinated and stained. The first objection has been overruled by evidence, while the most casual examination of French cave-relics would dispel illusions on the second point; and it may be mentioned incidentally that the earliest cave-relics in France or elsewhere are normally devoid of any patina whatever. The mysterious process known as patination still awaits scientific explanation, but judged from that standpoint alone the Cissbury series might well be attributed to early palaeolithic times. The change in mineral condition at Grime's Graves is not so pronounced, but the Sussex specimens, originally pure black, are reduced to white biscuit, a thin core alone remaining to testify to the original colour and condition. Had these worked flints been subjected to the action of iron in

[1] *Congrès préh. de France*, Vannes (1906), pp. 121, 137; figs. 1, 5, 10.

[2] *Proceedings*, xxiii. 241, 385.

solution they would have assumed the colours, and probably the lustre, of gravel implements; and though patina by itself is a poor criterion of antiquity, it becomes an important factor when uniformly distributed over a large and homogeneous series.

A sceptical position based on such arguments as those just examined might easily be proved untenable, and might also be relinquished without regret in view of more formidable objections that will appear in the following pages. But it will first be advisable to discover how far the Aurignac stage is represented in this country by remains that any one acquainted with the results of continental research would accept without question. If such a culture can be traced in parts of England where caves were available for occupation by man and beast, it will next become imperative to produce signs of contemporary civilization in the chalk area.

A brief description of the Aurignac culture at its best, based on recent excavations in Würtemberg, but entirely agreeing with the French evidence, may be quoted here from Dr. R. R. Schmidt's paper on Sirgenstein.[1]

The fauna of the middle Aurignac period undergoes no important change in composition, but is poorer than early Aurignac by a few species; the list is as follows:

Elephas primigenius	(mammoth, frequent)
Rhinoceros tichorhinus	(woolly rhinoceros, frequent)
Cervus elaphus	(red deer, large)
Rangifer tarandus	(reindeer, frequent)
Equus caballus	(horse, frequent)
Ursus spelaeus	(cave-bear, frequent)
Canis lupus	(wolf)
Canis sp.	(species of dog)
Lepus variabilis	(hare)
Aquila sp.	(species of eagle)

The middle Aurignac culture of Sirgenstein (near Schelklingen, Würtemberg) presents a larger number of types and a greater advance on the decadent types of Le Moustier than early Aurignac. The Aurignac style of flaking aims at rounding off all angles and edges. Hence arises a series of symmetrical forms, such as the pointed oval, single and double end-scrapers, oval tools and others formed like the point of a leaf. Aurignac work is easily recognized by its deep fluting, which at times covers the entire edge of prismatic blades in a single row, but more often is in more than one row (the so-called step-flaking), covering half the surface of the implement. The butt-end of blades is often rounded off by fan-shaped flaking, or, in the case of thicker prismatic blades, blunted into the form of a wedge by the removal of long narrow flakes. On scraping and cutting tools often occur hollows and notches. To complete the resemblance to the middle Aurignac stage of Western Europe,

[1] Translated from *Der Sirgenstein und die diluvialen Kulturstätten Württembergs* (Stuttgart, 1910), p. 17.

there is above all a series of pyramidal scrapers like those of Spy, Tarte, Brassempouy, Cro Magnon, La Ferrassie, Pont-Neuf, Bouitou, Les Cottes, Trilobite in the West, and Krems, Willendorf, &c., in the East of Europe. Larger and smaller specimens (of the Tarte plane) occurred at the upper limit of this stratum. Graving-points are still rare, occurring on thick leaf-shaped flakes or on the edge of blades and blade-scrapers; but the bow-graver is not found in the middle Aurignac bed at Sirgenstein. The less typical domestic utensils include blades with the plain face scaled (*mit Aussplitterungen*); the so-called stone-chisels, borers, &c., which also occur in the other Aurignac strata. Compared with the developed stone industry, bone tools are far behindhand; foremost among them are smoothers made of the ribs of large animals (bear, horse, &c.), pointed ivory splinters, lance-heads and awls of bone and horn, blocks of mammoth tusk with supposed hunting-tallies, &c. From the same layer come points agreeing in outline with the Aurignac point, but without the split base. All the bone tools are better smoothed than the lower Aurignac specimens.

In the caves of Britain there are a few unmistakable traces of the Aurignac culture, though the associated fauna cannot now be isolated with any degree of certainty. It is curious and at the same time encouraging to notice the identity of types on both sides of the Channel, and their exclusive connexion with certain horizons, which are best determined in the large series of French caves excavated in recent years under the superintendence of leading experts. Sir John Evans drew attention to one Aurignac feature in specimens from Kent's Cavern (his fig. 302) and Brixham Cave, viz. the trimming of the side-edges of flakes; but the Hyaena Den at Wookey Hole, near Wells, Somerset, was explored between 1859 and 1863 by Prof. Boyd Dawkins and others, and yielded, among other remains in the Cave-earth, a flint flake ($2\frac{3}{4}$ in. long without its point) which had been trimmed by secondary chipping on the flat face, slightly so along one side, and over half the other face, both edges showing considerable signs of wear by use. Another form, of which two specimens were found of Upper Greensand chert, 'was roughly pyramidal, with a smooth and flat base and a cutting edge all round, much like an instrument found in the cave of Aurignac by M. Lartet.' The partial surface-flaking is clearly an anticipation of the Solutré style; and the greensand cones of Aurignac type prompt one to suggest that 'two rudely fashioned bone arrow-heads of the shape of an equilateral triangle with the angles bevelled off' were none other than the Aurignac bone point with split base; but they have both been lost.

The art of flaking a surface flat seems to have been practised with success at a still earlier date, though not continuously through Aurignac times. Much has been written in recent years on the discoveries at La Micoque, a high bank

[1] Evans, *op. cit.*, 2nd ed., pp. 518–19, p. 498, fig. 391. The cones were found with remains of the hyaena (*Quart. Journ. Geol. Soc.*, xx. 273), and are compared with hundreds found at Standlake and Yarnton, Oxon.

of a tributary stream of the Vézère opposite the well-known site of Laugerie Haute, Tayac, Dordogne, but opinions are still divided as to its true horizon, and few will contend that its problems have been completely solved. Most authorities[1] regard its peculiar industry as a transition stage between St. Acheul and Le Moustier; others, including actual excavators of the site, insist on its being a late phase of Le Moustier. The question is complicated by the paucity of the fauna; bones and teeth of the horse were plentiful in this tufaceous deposit, but the remainder consisted of some bones of *Bos primigenius* and *Bison priscus*, and a bear's tooth, though the latest excavator also mentions mammoth.[2] Steppe conditions seem to have prevailed when this open-air settlement existed, and the flint products are peculiar. The surface is white or reddish yellow, and resembles biscuit or porcelain according as the patina is more or less advanced.[3] In the former case it is generally friable and can be easily scratched with a knife, but the work is clearly visible. The white surface is sometimes stained in places by oxide of iron, but never shows signs of rolling; and the origin of the deposit is not explained.

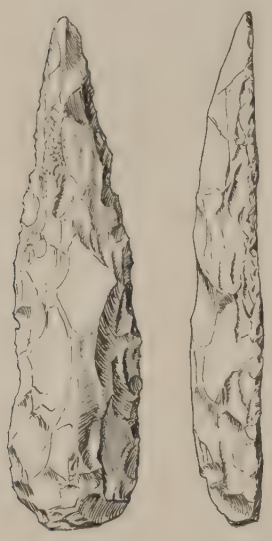


Fig. 32. White flint implement, with side view; Dunbridge, Hants. ½.

Its mention here is due to the similarity between one of its chief types and a few specimens found in England that apparently help to bridge the gap between the river-gravel deposits and the Cissbury series. The hand-axes of La Micoque are furnished with long slender points and straight converging edges, some specimens having two convex chipped faces, others only one, the other being quite flat.[4] A close parallel to the latter type in form if not in colour has been found at Swanscombe, Kent; but the most striking examples, with the under-face chipped flat, agree in colour and are of exquisite workmanship. A specimen, $8\frac{1}{2}$ in. by $3\frac{1}{2}$ in., in Mr. W. G. Wilsher's collection was found 8 ft. deep in gravel on the Chiltern Hills at Goring Heath, about 450 ft. o. d. Its surface is lustred and bluish white or grey, whereas a beautiful specimen in Mr. Dale's possession (fig. 32) is a lustrous white, the under surface chipped flat and the outline highly suggestive of one of the best specimens[5] from the cave of

[1] References are given by Déchelette, *Manuel d'Archéologie*, i. 86.

[2] O. Hauser, *Bericht über die Prähistoriker-Versammlung in Köln*, 1907, p. 91; see also *L'Homme préhistorique*, 1908, p. 41.

[3] The chemical question is discussed by Dr. Capitan, *Revue d'Ec. d'Anth.*, 1896, p. 411; and Herr Hauser has published a comparative analysis of the patina and core of the flint (*Bericht*, &c., 98).

[4] For another site see *Congrès préh. de France*, Périgueux, p. 176.

[5] A thin assegai-blade, 5·3 in. long, *L'Anthropologie*, 1898, pp. 532, 540, fig. 1; reproduced in

Brassempouy, Landes, of the Aurignac period. Reference to plate XXIV will also show a connexion with the doubly convex celts of Cissbury; and its discovery in the Dunbridge pit (probably in the brickearth), which has yielded a large number of the ordinary Drift types,[1] is an important argument for continuity.

More evidence as to the date of this surface-flaking is afforded by the discovery in Kent's Cavern of finely pointed lanceolate blades, of which one is figured by Evans (his fig. 300). This is of leaf form, 4¾ in. long and nearly 1¼ in. wide, of triangular section, the flat face being only partially worked. The flint is white and porcellanous, and so decayed that it can be cut with a knife, though the flaking is clear. It was found under stalagmite nearly 1 ft. thick, with teeth of hyaena, bear, and fox. Other examples of this partial surface-flaking have been found at Ffynnon Beuno Cave, St. Asaph; and at Creswell Crags, Derbyshire.[2]

Apart from cave-deposits and the classic sites of Cissbury and Grime's Graves, remains of Aurignac man seem to be abundant in South England and may also be detected on the Yorkshire wolds. A large proportion of the North and South Downs series appear to be of this date, and in North Wiltshire one hill is covered with pure-white specimens that are mostly small, but comprise most of the leading types, such as cones, steep end-scrapers, small choppers, and carinated planes. In the neighbourhood of Blandford, Dorset, many specimens have been collected that probably belong to a later stage of the Cave period, but a few of the Aurignac types have also been noticed; and even in Cornwall, where flints straight from the chalk could not be obtained, there are typical Aurignac specimens.

On the Chilterns this stage is also represented, though by somewhat rude examples, on a site that may prove to be another Cissbury; and at High Wycombe on the Great Western and Great Central railway-line a flint-mine with picks and pick-marks was discovered a few years ago.[3]

A section of Thames deposits at the new Admiralty Offices, Whitehall, London, yielded to Mr. Lewis Abbott, besides an interesting fauna, a lanceolate flint and a deeply patinated leaf-shaped implement, both suggestive of reputed neolithic types, though the work was pronounced palaeolithic.[4]

Piette's *L'art pendant l'age du Renne*, p. 46. Larger examples like Mr. Wilshere's have been found with other suggestive forms in Tunis; see de Morgan, Capitan and Boudy, 'Les stations préh. du Sud Tunisien' (*Rev. d'Éc. d'Anth. Paris*, 1910, pp. 128, 129).

[1] *Proceedings*, vol. xxiv.

[2] *Stone Age Guide* (Brit. Mus.), 2nd ed., p. 72.

[3] *Museums Journal*, 1902, p. 156.

[4] *Proc. Geol. Assoc.*, xii (1892), pp. 349, 354.

An account by Dr. Plowright of a pit or flint-mine on Massingham Heath, Norfolk, is not easily accessible;[1] and the original blocks which might have been introduced here have been lost. The site is 19 miles due north of Grime's Graves, and was described in 1891. The pit was originally 5 to 6 ft. deep and was filled with masses of flint and chalk rubble, large lumps of flint lying on the bottom, and a layer of flakes about 1 ft. thick being just below the turf. The flints were creamy-white to pale blue, often mottled with yellow and brown, and sometimes covered with minute black specks. Instead of being lustred, many were porous and resembled unglazed porcelain, the edges being quite sharp; and the author insisted that the implements were never meant to be polished by grinding. The following illustrations may be referred to as analogous to Cissbury finds: 1 and 2, celts 6 in. and $5\frac{1}{2}$ in. long; 3, somewhat of kitchen-midden character (*tranchet*); 5, pick 7 in. long, one face being a plain fracture; 6, a tool 7 in. long with similar flat face and pear-shaped outline, with long parallel flaking at end; 7, tool measuring $6\frac{1}{2}$ in. with oval outline and steep edge-chipping; 10, one of several with the cutting-edge of U outline, generally regarded as the ends of celts, $7\frac{1}{2}$ in. long, $5\frac{1}{2}$ in. wide, and 3 in. thick at the butt, the weight being 4 to 5 lb. One pick curved lengthwise, 8 or 10 in. long, weighed 3 or 4 lb., and there were several choppers, consisting of lumps roughly trimmed and provided with a rude cutting-edge. Hammer-stones made of quartzite pebbles were noticed as at Grime's Graves, and deer-antler picks were buried in the rubble. As at Cissbury, circular scrapers were extremely rare.

Attention has recently been called by Mr. W. G. Clarke[2] to similar remains in the vicinity of Norwich, at Easton, Ringland, and Markshall; and it is more than probable that this list will be rapidly increased by local research.

The Yorkshire wolds are only less prolific than the Downs, and there are not wanting indications of Aurignac culture in this northern area. It is clear from the caves of Western Yorkshire that palaeolithic Cave-man defied the elements in that region, and still further north the painted pebbles from Caithness and perforated harpoon-heads from the Oban caves[3] show that human occupation was not rendered impossible by an arctic climate. These belong to the stage immediately succeeding that of La Madeleine and therefore not strictly palaeolithic; but a still earlier occupation of certain Scottish areas is by no means out of the question.

[1] *Trans. Norfolk and Norwich Naturalists' Soc.*, v (1894), p. 250.

[2] A summary of the paper read to the Prehistoric Society of East Anglia, Jan. 22, 1912, is given in the *Antiquary*, March, 1912, p. 116.

[3] These well-known relics have not been frankly accepted by all authorities as contemporary with precisely similar finds abroad (as at Mas d'Azil), but opinion is tending in their favour. See, for example, *L'Anthropologie*, 1896, p. 319; *Congrès internat.*, Paris (1900), pp. 207, 216.

Nor should it be surprising to find traces of the Cave-period in Ireland. Mr. W. J. Knowles has for a long time insisted on the palaeolithic aspect of many finds in the north,[1] and one of his papers describes a site that may be taken as typical. At Cushendall, on the coast of Co. Antrim, have been found many basalt implements that recall the culture of Cissbury or at least of Campigny, and their early date is attested by their geological position. According to Mr. Knowles:[2]

> The axes are found below the peat associated with the clay on which it rests. There are various sections in the neighbourhood of Ballycmon which show the connexion of the peat with the boulder-clay. In every case the peat is resting directly on the clay. . . . A considerable thickness of peat has formed in course of time, which is locally known as hard peat, and on the top of the hard peat the Scotch fir grew abundantly. These trees perished in time, and their roots are now covered with a further thick layer of peat. Occasionally, as the farmer cuts the peat for fuel, polished stone axes are found among the roots of the Scotch fir. The axes from Tievebullagh and Ballymena are found below the peat and even mixed with the clay on which it rests.

It is possible to recognize the Cissbury celt in his nos. 6–8; the steep-ended oval tool in no. 10; the pointed tool with triangular section in no. 36; the chisel with circular section in no. 9; the 'hand-axe' of the Drift in no. 1; the side-scraper of Le Moustier in no. 34; the edge-trimming of Aurignac in no. 38; and its peculiar fluting in nos. 2 and 40. The culture of Campigny is reflected in nos. 22 (*tranchet*, or celt with cutting-edge formed by removing a transverse flake) and 3 (a thick celt 7¾ in. long that is verging on the 'pick' form). These forms also occur in flint, and some whitish specimens from North Ireland are here illustrated:

PLATE XXII.

Fig. 7. Implement of irregular oval form, flaked on both faces; point and blunt butt.
Fig. 8. A facetted lump, probably a core, but resembling the Aurignac cone.
Fig. 9. A typical pick, roughly flaked, approaching the cylindrical form, with chisel-edge at one end.
Figs. 10, 11. Somewhat narrow examples of the transverse axe, as found in Danish shell-heaps, the edge obtained by transverse flaking.

Further investigation may reveal other characteristic forms, but meanwhile a reference to the table on p. 140 will suggest that human work resting on a glacial deposit well below a bed of *Pinus sylvestris* corresponds to the latest Yoldia or earliest Ancylus phase in Southern Scandinavia, when the glacial sea was being transformed into a fresh-water lake by elevation of the land. The polished celts

[1] *Journ. Royal Soc. Antiq. Ireland*, 5th ser., vii. 1.
[2] *Journ. Anthrop. Inst.*, N.S., vi. 366 (eight plates).

in the Pine layer seem to be earlier than the corresponding stage in Norway, the Nöstvet culture being assigned to the period of maximum depression of the land (Littorina stage, *see* p. 149); but a correlation may yet be established. At any rate, the stock objection to palaeolithic man in Ireland no longer holds, as the mammoth has been found there,[1] and where the mammoth could live man could live also.

Though it is easy to exaggerate the importance of coincidences of form, it should be mentioned that the peculiar style of Aurignac is not confined to Europe, but appears in two series from Africa exhibited in the British Museum. Though little is known of the geological date or distribution of the specimens from sand deposits in Somaliland,[2] Mr. Seton-Karr also brought from the neighbourhood of flint-mines in the eastern desert of Egypt planes and leaf-shaped blades of coarse workmanship that bear a strong resemblance (apart from the colour of the flint) to European specimens of Aurignac date. It would be a great advantage to be able to isolate such forms from among the thousands of surface finds in the desert, and interesting to notice whether the patination and kind of flint remained uniform; moreover, the practice of mining for flint only strengthens the connexion with Cissbury and Grime's Graves. In addition, reference should be made to the Aurignac forms found in Tunis and to the discussion of their date in papers on the series, which are admirably illustrated.[3]

Little help can be expected from geology in dating surface finds which, being imperishable, have been accumulating during untold ages, but many of the finds recorded above as presumably of Aurignac date are superficially buried in sandy deposits that may possibly be due to similar climatic conditions at a given time. For instance, at Hundsteig, Krems, on the Danube, forty miles above Vienna, no less than nine horizons could be traced in the loess, the latest human work exhibiting a rudimentary Solutré style, and the bulk being clearly referable to the Aurignac stage.[4]

Recent exploration in the Rhine valley has enabled Dr. Bayer, of Vienna, to date the later loess by its archaeological content, and the following scheme was submitted to the Prehistoric Congress at Tübingen last year:[5]

[1] *British Assoc. Reports*, Portsmouth, 1911, p. 578; Ussher, *Proc. R. Irish Acad.*, xxv. B. 1 (Doneraile). The Aurignac culture seems also to be represented at Toome (Lough Neagh) and Larne (*Proc. R. Irish. Acad.*, xxv. C. 183. 189, where Messrs. Coffey and Praeger connect Cissbury and certain other types with land-movements).

[2] *Journ. Anthrop. Inst.*, xxv. 271; the plates convey no idea of the series referred to. Evans, *op. cit.*, p. 653.

[3] *Rev. d'Éc. d'Anth. Paris*, 1910, pp. 207, 208; 1911, p. 226. For Italian analogies, *see* Morelli, *Iconografia della Preistoria Ligustica*, pl. lxxii and pl. lxxiii, figs. 1–6.

[4] Strobl and Obermaier, *Jahrbuch für Altertumskunde*, iii (1909), p. 129.

[5] *Jahrbuch für Altertumskunde*, iv. 169; *Zeitschrift für Ethnologie*, 1912, pp. 1, 180.

CLASSIFICATION OF PALÆOLITHIC PERIOD, WITH SPECIAL REFERENCE TO GERMANY

Geology.	*Climate.*	*Industry.*
Würm glaciation	Post-glacial: Daun; Gschnitz; Bühl; Achen oscillation	La Tourasse stage (Mas d'Azil); La Madeleine (upper rodent-bed at Sirgenstein)
	Maximum	Late Solutré stage
Riss-Würm interglacial	End of deposit of later Loess	Early Solutré stage
	Steppe conditions: deposit of later Loess.	Aurignac stage
	Forest conditions (Decalcification of older Loess)	Le Moustier stage
Riss glaciation	Lower rodent-bed at Sirgenstein	
	End of deposit of older Loess	
Mindel-Riss interglacial	Deposit of older Loess	St. Acheul stage
		Chelles stage

According to this scheme there was a deposition of loess just before the two glaciations known as Riss and Würm, and the Aurignac culture of the later loess was passing into that of Solutré when a wind-borne deposit covered that part of Europe like a mantle. It has been traced over some part of Belgium,[1] and the island of Jersey is covered with a deposit of this name;[2] but in England the subject is highly controversial. Without entering into the nature and origin of loess in this country, it will suffice to point out that at Cissbury no less an authority than Sir Joseph Prestwich remarked on the difference between the red earth in the filling of the shaft and that lining the ditch of the earthwork. The former was nearly unaltered clay, like that overlying the chalk all over the hill, and the latter consisted of clay and chalk mixed together as if by rain.[3] If the red seams were merely silting, it is difficult to explain the absence of chalk grains in it; and the suggestion may be hazarded that this red earth, which may perhaps be correlated with the cave-earth[4] of our palæolithic caverns, represents the later loess of the Rhine area. In East Anglia it may have taken another form, as this is the driest part of England. Inland blown-sand is common

[1] Rutot, *Les deux grandes provinces quaternaires de la France*, 23 with map (*Bull. Soc. préh. de France*, 1908).

[2] *Archæologia*, lxii. 471.

[3] *Journ. Anthrop. Inst.*, v. 373-4.

[4] On this see Lapparent, *Traité de Géologie*, ii. 1702, 1707, who preferred Searles Wood's theory of the loess as given in *Geological Magazine*, 1882, pp. 339, 411.

on the eastern edge of the Fens, and the Breckland is the nearest approach to steppe conditions in the country. Possibly the sand at Grime's Graves has drifted in recent times above the prehistoric flint-mines, wholly or in part, but it is hard to believe that the first flint-miners went through 13 ft. of running sand before coming to the chalk. Surely it is much more probable that the surface was clear of sand when the shafts were sunk, otherwise primitive man must be credited with divining powers equal to his reckless energy in mining under sand.

Nor does the loess in East Anglia lack official recognition. The memoir of H.M. Geological Survey[1] states that 'between Icklingham and West Stow, at a brickfield about a mile ESE. of Icklingham All Saints Church, beneath the gravelly soil, dirty loess-like loam is worked to the depth of 15 ft. It dips westward, and in places contains fresh-water shells, many fragmentary. . . . Bones and deer-horn picks have been found, but were buried up by the workmen.' Discoveries of undisturbed 'working-floors', to all appearance of Aurignac date, under one foot or more of sand (at Ipswich by Mr. Reid Moir, and on more than one site near Icklingham by Dr. Allen Sturge), go far to justify the conjecture that this stage of the Cave period was followed also in England by a deposit of loess. Nor are such occurrences confined to East Anglia. On the south side of Dartford Heath, a well-known area in Kent on the south bank of the Thames, a fine grey celt of the Cissbury type, 6·7 in. long, now in Mr. W. M. Newton's collection, was found under 3 ft. of sand that may perhaps be accounted for in the same way.

In spite of disagreement as to its exact position in the series of glaciations, authorities agree that in the Aurignac period steppe conditions prevailed,[2] and the fauna was adapted to those conditions. It is not proposed to treat the palaeolithic fauna in detail, but to give a few salient instances to show that the usual tests are fallacious, and that so-called domestic animals co-existed with species now extinct. It is notoriously difficult to distinguish between bones of the goat and sheep, and anything but easy to decide whether a particular species was wild or domesticated at a given time, as there must have been transitional forms, showing the development of the domestic animals from feral ancestors. The Celtic shorthorn or *Bos longifrons* is generally regarded as a domestic species, distinct from the wild *Bos primigenius* (aurochs, urus) and *Bison priscus*; but the distinction is anything but sharp, as the shorthorn goes back to palaeolithic times, though neolithic man is usually credited with the first domestication of animals. This, however, cannot be regarded as an axiom, for, apart from the supposed bridle on representations of the horse from palaeolithic caves,[3] and even marks of owner-

[1] *Parts of Cambs. and Suffolk* (sheet 51 NE.), p. 79.
[2] This problem is stated by Dr. Laloy in *L'Anthropologie*, xix (1908), p. 614.
[3] Especially St. Michel d'Arudy, Basses-Pyrénées (*L'Anthropologie*, xvii. 28, fig. 1).

ship on cattle,[1] the sheep, goat, pig, and dog have been found in Cave-deposits that can be dated by the human relics with considerable accuracy. Even if the discovery by Dean Buckland[2] of sheep below mammoth in Paviland Cave, Glamorganshire, is explained by disturbance of the strata, there is no gainsaying the occurrence of the dog at Châteaudouble, Var, in Le Moustier times,[3] or at Sirgenstein, with a species of sheep, in Aurignac times. In a layer 12–16 in. thick over the Neanderthal skeleton at La Chapelle aux Saints (Corrèze) the following species occurred: reindeer, one of the large bovidae (perhaps bison), horse, marmot, fox, badger, a species of goat or sheep, pig, rhinoceros, ibex, marmot, and wolf, this stratum being clearly of palaeolithic age.[4] Prof. Boyd Dawkins, who has rejected most of the evidence for such associations as untrustworthy, himself acknowledges finding a skull of the sheep (*Ovis aries*) with an incisor of *Sus scrofa* under 20 ft. of cave-earth at Avetine's Hole, Burrington Coombe, Somerset.[5] Further, pig and sheep or goat were found in the Ightham fissures of the Shode valley, Kent, with mammoth, rhinoceros, reindeer, and other pleistocene species.[6]

Apart from specific instances there are *a priori* arguments of some weight. It is fairly evident that our domestic species must have been developed from the wild stock in one district or another before the neolithic period:[7] and the change cannot have been effected in a few generations. Unless the domestic breeds came into being during the mythical hiatus, the only conclusion is that they existed during what was the late palaeolithic period in Western Europe: and several authorities now hold that their origin is to be looked for not in Asia, the fabled home of the Aryans, but in Europe itself. Prof. Boule, for instance, stated in 1894 that naturalists now recognize the existence of transitional forms linking the palaeolithic and neolithic faunas, the various types merging insensibly into one another.[8] Zaborowski remarks that the horse was the daily food of pleistocene man at Solutré; the wild sheep existed in Europe (England included) in pleistocene times, and the goat is as old as the sheep; the urus, bison, and *Bos longifrons* date from the same geological period, and the pig could hardly have been driven over the steppes of Russia into Europe.[9] M. Salomon Reinach

[1] Mahoudeau, *Rev. d'Ét. d'Anth. Paris*, 1909, pp. 282, 286 (bridles). [2] *Reliquiae diluvianae*, p. 87.
[3] *L'Homme préhistorique*, 1911, pp. 143, 167.
[4] *L'Anthropologie*, xix (1908), p. 515; cf. Duckworth, *Prehistoric Man*, table opp. p. 84.
[5] *Internat. Preh. Congress* (Norwich, 1868), p. 282.
[6] Lewis Abbott in F. J. Bennett's *Ightham*, 115, 118; *Quart. Journ. Geol. Soc.* i. 200; iv. 419.
[7] Hoernes, *Der diluviale Mensch in Europa*, p. 88.
[8] *L'Anthropologie*, 1894, p. 463: 'le fameux hiatus n'existe que dans nos connaissances.'
[9] *L'origine des animaux domestiques en Europe et les migrations aryennes* (Assoc. française pour l'avancement des sciences, Grenoble, 1904, pp. 1034–49).

has also summed up in favour of a European origin both for our domesticated animals and cultivated grains;[1] and in Sweden at any rate the pig was developed locally from the native *Sus scrofa*, that animal being connected with *Sus antiquus* and *Sus palustris* of Rütimeyer.[2] If the beneficent Gulf Stream did indeed ameliorate the climate and allow the grass to grow, it may well be that Southdown mutton dates back to the palaeolithic period. Away from caves one would see little of the beasts of prey who haunted them, such as the cave-bear, cave-lion, and hyaena; and the milder climate would account for the absence of the mammoth, woolly rhinoceros, and reindeer, which characterize the Cave period of Southern France. North of the Loire the conditions seem to have been different, and even in the south there are sites without traces of the cold-loving animals. Solutré seems to have had the same climate as the earlier La Micoque,[3] where the mammoth is indeed mentioned,[4] but most of the bones were of the horse, with a few of the ox and a bear's tooth; and M. Arcelin found that the lower and earlier bed at Solutré contained no bones of animals that have since become extinct.[5] Piette, too, in discussing Brassempouy, emphatically protested against the idea that the Reindeer period was all dry and cold, and considered it to have been first mild, then cold and snowy, and finally rainy, the Solutré stage being, if not warm, at least temperate in the south.[6] The reindeer stage of Piette's glyptic period was preceded by the horse stage, and the distribution of the Aurignac culture shows that the horse predominated in those regions near the sea where vegetation was encouraged by a milder climate.[7]

It may be objected that the mammoth fauna *has* been found in English and Welsh caves associated with human handiwork, and that species which are now regarded as domesticated are rare in caves, if they are represented at all. The latter point has already been touched on; and in regard to the former it should be remembered that in the last few years great advances have been made in cave-exploration, and both bones and flints recovered in the last generation might have been still further subdivided according to their horizons, with different results. Much has been made of the relatively few caverns explored in this country, but it cannot be said that our Cave period has been fully elucidated in the light of recent discoveries. Even if the mammoth fauna could be shown to have persisted from Le Moustier to La Madeleine times, the Cissbury problem would still remain.

[1] *L'Anthropologie*, iv. 551; xvi. 187.

[2] *Les Grottes de Grimaldi*, iii—*Géologie et Paléontologie* (M. Boule, 1910), p. 199; *L'Anthropologie*, xix. 302; xx. 583; Rolleston, *On the domestic pig of prehistoric times in Britain* (Trans. Linnean Soc., 1876, 2nd ser., i, Zoology, p. 251).

[3] *L'Anthropologie*, xvi. 26.

[4] *L'Homme préhistorique*, 1908, p. 41.

[5] *L'Anthropologie*, 1898, p. 553.

[6] *Ibid.*, 1893, p. 467.

[7] Déchelette, *Manuel d'Archéologie*, i. 128; *L'Anthropologie*, 1896, p. 2 (note).

for though abundant abroad, Aurignac specimens have rarely been found in British cave-deposits. The limestone caverns are generally far removed from an abundant supply of flint direct from the chalk; and the Cissbury facies seems practically confined to the chalk area.

Our few cave-relics of the period (p. 137) contrast with the larger specimens and bolder work from the Downs also illustrated in Evans (figs. 205, 209, 215, 216, from Berling Gap, near Eastbourne). These were naturally regarded as neolithic, but fig. 215 especially has the Aurignac stamp, and falls into line with the Cissbury series. Once the connexion is established, it should be easy to identify other Aurignac types in our collections of cave-relics.

The next great obstacle to the recognition of Cissbury as a palaeolithic site is the presence of polished specimens: or rather (since the two or three from Cissbury are generally considered later surface finds), the discovery of a polished basalt celt deep in the pit-gallery at Grime's Graves. This has been noticed above (p. 111), but demands closer attention, as it has governed the chronology of both sites for the past forty years. Rumours that the discovery was regarded locally as a joke, implying *mala fides* on the part of the workmen, have not been substantiated in spite of suspicious circumstances; and Dr. Sturge's diligent inquiries in the neighbourhood only confirm Canon Greenwell's declaration of its entire authenticity.[1] The excavator in a recent letter states that he saw, at some distance from the mouth of the principal gallery, marks on the side-walls made by a tool quite different from the deer-horn picks, and came to the conclusion that they were the result of using a stone axe. Further along the gallery the marks were less sharply defined, as if the axe had been blunted; and still further in, the impression was imperfect at one corner, as if a piece had been broken off the stone. Some days later he was called below to see in the consolidated rubble a black object which was removed by picking in his presence. It turned out to be a basalt axe which to-day is damaged at one side of the cutting edge; and as it fitted the tool-marks, the obvious inference was that this tool had been used in cutting the gallery and was discarded when damaged, as were the deer-horn picks.

It would naturally facilitate matters to discard the axe as doubtful; but its interest is considerably increased by recent discoveries in Norway, and its palaeolithic date is likely to be established. A partly polished celt of greenstone, 2½ in. long, is indeed said to have been found in gravel at a pit near Malton, Yorks., and has given rise to some discussion, Sir John Evans rejecting it as palaeolithic on the ground that the gravel was of glacial origin.[2] At any rate it should be borne in

[1] *Man*, 1908, no. 92, where the Canon's account of the find is given in his own words.
[2] Evans, *op. cit.*, p. 135, fig. 81.

mind that polishing is not necessarily a late product of civilization. There was nothing to prevent primitive man shaping stone by this means; and in the Cave period he certainly adopted the process for implements of bone and antler. Possibly examples have been found and rejected on *a priori* grounds or otherwise explained; but one case well illustrates the danger of foregone conclusions. At the meeting of the Association Française at Blois in 1884[1] M. Adrien de Mortillet exhibited a dozen flints of La Madeleine date, including end-scrapers and graving-tools with traces of polishing. One critic insisted that the hiatus was a brutal fact both as regards zoology and industry, and presumably rejected the find; another accepted the situation and remarked, 'Call it what you will, we are in the presence of the beginnings of neolithic polish, on the way leading to the abolition of the hiatus.' The facile explanation that the tools were polished by continual use was reduced to absurdity by the fact that the polish was at the butt-end, not on the working-edge. The incident suggests a cautious attitude with regard to celts of Cissbury type with the cutting-edge polished. Such specimens undoubtedly exist,[2] and the possibility of their palaeolithic date must be considered, though the evidence at present is not convincing.

To postulate complete polishing of the surface in still earlier times would be futile in regard to flint, but the case is altered when the material is stone of another character. This point has been discussed by Dr. Fischer, who very aptly remarks that some kinds of stone, such as flint and obsidian, flake well, and others have to be shaped by grinding, such as granite, diorite, and serpentine.[3] Such materials were adopted in districts where flint did not naturally occur; and implements of fine-grained stones partly polished are at least as old as the earliest kitchen-middens of Denmark, which are generally considered to mark the dawn of neolithic culture. Important finds at Nöstvet, at the inner end of Christiania fjord, illustrate stages in the evolution of the greenstone celt, and the same types have been found on the coast of Bohuslän and S.E. Norway, as well as at Viste near Stavanger, on the west coast.

The earliest form is long and narrow, with triangular section, generally chipped into shape and seldom ground on the faces of the cutting-edge, the length being $3\frac{1}{2}$–$4\frac{1}{2}$ in. Later specimens are larger, $4\frac{1}{2}$-6 in. long, and are of trapezoidal section, regularly chipped and always ground at the cutting edge. There is also a group with section intermediate between a triangle and trapezium, but the typical Nöstvet implement may best be compared, in everything but material, with the 'picks' of flint common on the lower Thames and the downs of S.E. England. The probable history of this type in England is noticed

[1] *Compte rendu*, part i, p. 212.

[2] Evans, *op. cit.*, p. 93, fig. 37.

[3] *Korrespondenzblatt der deutschen anthrop. Gesellsch.*, 1882, p. 23; cf. *L'Anthropologie*, 1893. p. 550.

below (p. 153), and it is pointed out by Dr. A. W. Brögger, who has made the subject his own,[1] that the Nöstvet site can be approximately dated by its height above sea-level. Both it and the oldest kitchen-middens of Denmark date from the period of maximum depression of the land below the sea, which is called after the predominant fossil-shell—*Littorina* for Sweden and Germany, and *Tapes* for Denmark, West Sweden, and Norway. The following table gives an outline of the post-glacial earth-movements in the neighbourhood of Christiania, which has been extensively studied in recent years,[2] especially by the geologist Dr. W. C. Brögger,[3] whose son has taken up the archaeological side of the inquiry with interesting results.

SOUTHERN SCANDINAVIAN AREA

Land Movements.	*Culture.*	*Fauna.*	*Flora.*
	Iron Age	Limnaea	
Land continued to rise till early mediaeval times	Bronze Age Passage-graves (Chambered barrows)		Spruce
Land sinks considerably, then rises again	Kitchen-middens	Littorina or Tapes, and red-deer	Oak Hazel
Land rises, and Baltic becomes a fresh-water lake	Maglemose (raft-dwellings)	Ancylus and elk	Pine
	Axes of reindeer antler		Birch
After Baltic glaciation the land sinks		Yoldia	Dryas (mountain avens)

That man existed in Denmark long before the maximum Tapes-depression has been shown by Dr. A. W. Brögger, who agrees with Dr. Sarauw[4] in placing the Maglemose culture about the middle of the Ancylus period, when the Baltic was a fresh-water lake, and the land, much higher than at present, was covered with pine forest (*Pinus sylvestris* or Scots pine). To a still earlier date may be referred certain axe-heads made of reindeer antler, so that an older stone age in Scandinavia that has long been an hypothesis is now an established fact, though its exact relation to the better-known industries of Western Europe has still to be determined.

[1] *Oxer av Nöstvettypen* (Norges Geologiske Undersögelse, no. 42, 1905); *Norges Vestlands Stenalder* (Bergens Museums Aarbog, 1907, no. 1, p. 1).

[2] Maps in Lapparent's *Traité de Géologie*, iii. 1712; many memoirs in *Die Veränderungen des Klimas seit dem Maximum der letzten Eiszeit* (Stockholm Geological Congress, 1910).

[3] *Strandliniens Beliggenhed under Stenalderen* (Norges Geologiske Undersögelse, no. 41).

[4] *Aarböger for nordisk Oldkyndighed og Historie* (Copenhagen, 1903), 314.

An interesting discovery in this connexion has been recently made near Christiansund, a large series of flints being collected for Trondhjem Museum, on which K. Rygh has published a preliminary report.[1] He regards them as older than anything hitherto found in that part of Norway, where flint is said not to occur naturally. As there are pieces with all the appearance of raw material, he argues that the tools were at any rate not imported ready made, but doubts their Danish provenance, as ancient sites on the Norwegian coast nearer Denmark have yielded no worked flints, and direct transit by sea at that early date seems out of the question. The midden-type of axe called by the French *tranchet* is well represented on these islands near Christiansund, and the conclusion is drawn that the culture is that of the Danish shell-heaps; but some specimens are said to be allied to Maglemose, and at least two of the illustrations suggest the Aurignac period. One is an end-scraper with steep fluting, and the other is a well-shaped flint-cone practically identical with that from Seaford (fig. 33). It is conceivable that this latter type was produced independently at different eras, but in France at any rate it is regarded as the hall-mark of Aurignac culture.

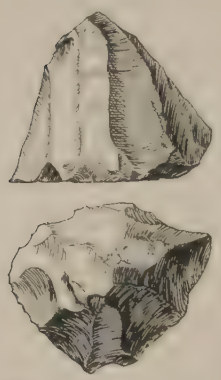


Fig. 33. Flint-cone, side and top views; Seaford, Sussex. ½.

Another determining factor in the chronology of Cissbury has been the discovery in the pits of earthenware sherds. The opinion of Dr. Rutot, based on M. Ed. Dupont's excavations and his own experience, has long been that pottery was known in Belgium as early as the Aurignac stage; and the evidence is vigorously presented in two recent papers,[2] with a number of illustrations. He points out that neolithic pottery is very rare in Belgium (as indeed is the case in England), except at the close of the period, but no less than twelve palaeolithic caves have yielded specimens to M. Dupont, whose skill and accuracy cannot be contested. The site called *Le Caillou qui bique*, near Roisin, Hainault, has proved most productive, the sherds being mixed with flints comprising hand-axes of debased St. Acheul type, Le Moustier points and side-scrapers, all covered with *ergeron* (a variety of loess), and clearly of early Aurignac date. About five hundred fragments were of reddish ware slightly fired, fragile and soluble in water after being immersed a few days. Some were fitted together, but it was not possible to recover the shape of any vessel, and ornamen-

[1] *Oldtiden*, vol. i (Report for 1910), pp. 37, 69. The sites are 100 ft. above present sea-level, the Littorina sea reaching 70 ft. at Christiansund at the time of maximum depression (p. 74).

[2] *Bull. Soc. préh. de France*, 26th Dec., 1907, and 26th Nov., 1908.

tation seems only to have begun with La Madeleine times (Goyet horizon). Among the pieces figured are the well-known vase with pierced lugs from Furfooz (cast in British Museum), a cup with round handle, a fragment with thick moulded lip, and three with parallel incised lines. Further, it was noticed that limestone grit, made from the cavern walls, was mixed with the paste in palaeolithic times, and was only covered with a white film of lime, owing to imperfect firing, whereas silicious grit was largely employed for the same purpose by the neolithic potters.

In France itself pottery has been discovered at Beauregard, near Nemours, Seine et Marne,[1] in surroundings that prove it to belong to the stage of La Madeleine; and it may be conjectured with some confidence that other finds have been made in excavating caves and other palaeolithic sites, but not credited as contemporary, and explained away by subsequent disturbance or accidental introduction by burrowing animals.

Most authorities would agree that the earliest pottery discovered in France is that from the pit-dwellings of Le Campigny, 25 miles due east of Dieppe. The site has given its name to a phase of culture about which the last word has not been spoken. The tendency is to make it the earliest neolithic stage and to correlate it with the Danish kitchen-middens, but nothing like proof of its horizon has yet been brought forward. Dr. Hoernes says, 'the Campigny period has many good points but one serious defect, that it absolutely refuses to fit into Piette's system. It has not the least connexion with the Mas d'Azil culture (transition from palaeolithic to neolithic), and naturally none with the Robenhausen stage (Piette's *pélecyque*, or polished celt stage). There remains nothing but to assume that the transition took one form in the south and another in the rest of France—a dangerous hypothesis, imperilling the view that, in spite of local variations, the Robenhausen culture became in the end universal'.[2] No site has yet been discovered on which the Campigny industry is found stratified between two datable horizons, and it seems probable that it never will be found under such conditions. As it is normally absent in the south of France[3] and extremely frequent north of the Loire, the suggestion may be hazarded that it is contemporary with one or more stages of the Cave period. It is unnecessary to suppose that caves were indispensable for human occupation at that time, or that areas with no natural caves were uninhabited. This point has

[1] *Congrès préh. de France*, Beauvais, p. 235 (H. Martin).

[2] *Der diluviale Mensch in Europa*, p. 89; cf. MM. Martin and Hue, *Congrès préh. de France*, Beauvais (1909), p. 259.

[3] Isolated surface specimens of Aurignac type may be seen in the British Museum from Pontlevoy, Orleans; and others from Poitou are unmistakable but include a typical celt of Cissbury type 4 in. long, patinated creamy white.

been touched on above (p. 136), and a few words may be added on later developments of Cissbury types both here and abroad. Though a connexion with the polished celt is fairly obvious, and archaeologists have long been waiting for light on the genesis of the Cissbury celt, it is none the less important to follow up the subsequent development and trace back to Cissbury various forms that would otherwise be isolated and undatable.

The accompanying illustration (fig. 34) represents a well-made tool of bluish-grey chalcedonic flint in Mr. A. E. Relph's collection. It was found on the surface of a field at Swanscombe with other specimens apparently of the Cave period, and has certain features in common with the tanged scraper from Grime's Graves and the humped scrapers or carinated planes from that site and from Les Eyzies

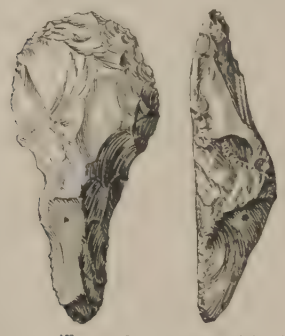


Fig. 34. Tanged scraper, with side view; Swanscombe, Kent. ½.

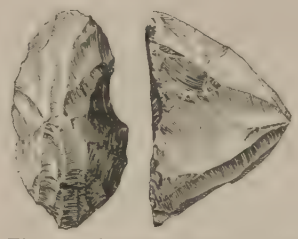


Fig. 35. Double scraper, with side view; Les Eyzies. ½.

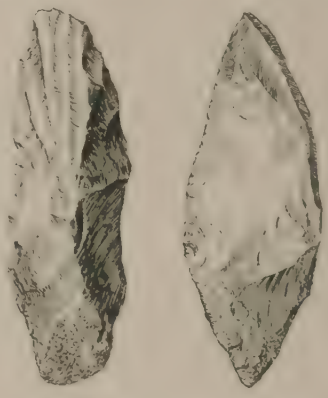


Fig. 36. Fluted plane, with side view; Les Eyzies. ½.

(figs. 35, 36). Whatever its exact horizon, it has certainly the appearance of having been subjected to scratching under great pressure. The specially hard surface is not only scratched in lines, but has a row of curved fractures as if bruised by the passage of a hard point, much like the 'chattering scratch' familiar to geologists. Dr. Sturge has suggested that these and other types of marking were due to ice-action,[1] and if the specimen illustrated is really of Aurignac date, the striation can be readily accounted for, as the loess deposit that closed that stage of the Cave period heralded a glaciation of some severity, whether it is to be identified with the Würm or the oscillations that followed it.[2]

A more clumsy tool somewhat on the same lines (fig. 37) is from a factory at Girolles, Ferrières, Loiret, and is one of twenty-one specimens from the site in the British Museum. These include a segmental tool with broad straight

[1] *Proc. Preh. Soc. E. Anglia*, i. 79; *Proceedings*, xxiii. 238.

[2] One scheme is reproduced on p. 143; but it should be mentioned that some authorities place the Würm glaciation before Aurignac, e.g. Obermaier in *L'Anthropologie*, xvi. 26. For the points in dispute, see table in *Zeitschrift für Ethnologie*, 1912, p. 22.

base, several roughly chipped celts, and a representative of the type resembling the broken end of a celt, but in reality a tool complete in itself (as figs. 5, 21). The rest might also belong to the Aurignac stage. A type related to the humped plane has been found more than once in Dorset, with a pronounced 'waist' (fig. 38). Like most from the same area it is deeply patinated and white all over; and a flatter specimen (fig. 39) found near Cissbury (Brighton Museum) is interesting as having been flaked at two periods sufficiently removed from each other to allow of a marked difference in patination. Both ends have been re-sharpened, and the later work is bluish, easily distinguishable from the main

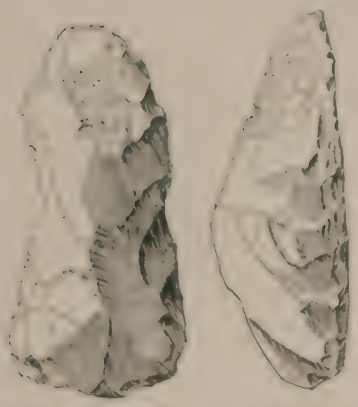


Fig. 37. Implement, with side view; from factory, Girolles, Loiret. ½.

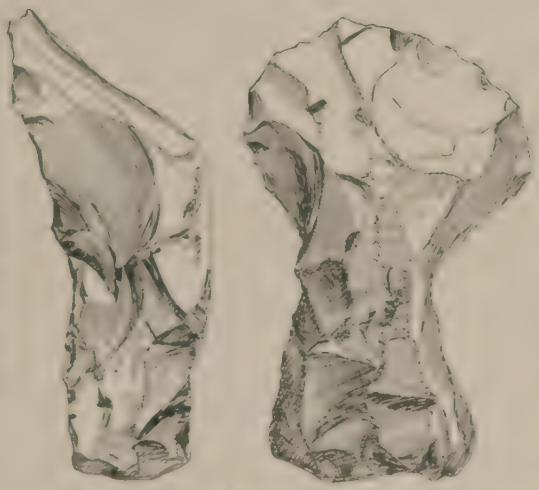


Fig. 38. Waisted plane, side and top views: Dorset. ½.

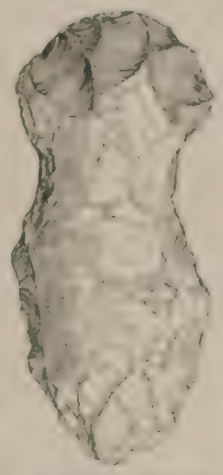


Fig. 39. Plane, reworked at both ends; near Cissbury. ½.

white surface. Whether these specimens are consecutive or approximately contemporary is at present uncertain, but a type hitherto isolated can now be placed in a logical, if not also in a chronological, sequence.

Another case of development from a Cissbury or Aurignac type may be more fully treated on another occasion; but any clue to the date and origin of the flint 'pick' so common in the Thames and on the North and South Downs will be welcomed.[1] An exceptional specimen, perhaps the longest known (14 in.), is in Salisbury Museum, and has a whitish surface; but many of the ordinary size (7–8 in.) have little or no patination. Examples of this size do not seem to have been found in or near the Cissbury pits nor at Grime's Graves, and they probably represent a later development, well seen at Campigny, Spiennes, and other well-known sites. The prototype, however, can apparently be recognized in the small

[1] See also *Congrès internat.*, Paris (1900), p. 214.

cylindrical tools with one blunt end found at Cissbury and common on the Downs, generally about 3 in. long. Intermediate length can doubtless be found in many collections, and this may be a case in which patination will be a trustworthy guide to relative date.

The stratigraphy which is supposed to guarantee the current view of the flint series examined above is due in the first place to M. D'Ault du Mesnil,[1] whose researches have established the following sequence:

1. Finer work, chisels (celts), and small forms all derived from the transverse axe (*tranchet*); polished.
2. Clay stratum; side-scrapers, end-scrapers, 'points,' coarse transverse axes, large picks; unpolished.
3. Loess, palaeolithic.
4. St. Acheul horizon.
5. Chelles horizon.

Reference has already been made (p. 133) to the investigations of M. Laville, who has found on several sites round Paris an horizon that he calls infra-neolithic, a non-committal term which reflects the prevailing uncertainty as to the origin of neolithic civilization. The sequence may be established, but the delimitation of the two stone ages has yet to be accomplished.

The best description of Le Campigny bristles with illustrations of palaeolithic forms which obviously discount the conclusion arrived at, on the following grounds, that the culture is neolithic. 1. Many hearths prove that the site was selected for habitation. 2. Polished stone was found in the humus, over two other layers (the filling and the hearth), in which no polished stones occurred. 3. Polishing of stone was unknown at the time the hearths were in use. 4. The flint industry retained some forms characteristic of La Madeleine and even Le Moustier, but also comprised new forms such as the pick and transverse axe. 5. Pottery, both rough and finer ware, preceded the polishing of flint. 6. Campigny follows the mesolithic stage (apparently Mas d'Azil). 7. Grinding-stones prove the use of grain and, by inference, agriculture. 8. Fauna and flora same as at the present day.[2]

A full description of such a well-known site would here be out of place, but attention may be drawn to one or two points of interest in the present connexion. Under a few inches of soil with its polished flints was a layer of yellow loam 4 ft. thick, sandy and mixed with natural nodules of flint 'de toute provenance'. As the chalk (below the pleistocene gravel in which the pit was sunk) is devoid of flints (Turonian), these cannot be the mouths of flint-mines,[3] but there is a

[1] *Congrès internat.*, Paris (1900), p. 207.
[2] *Rev. d'Éc. d'Anth. Paris*, 1898, p. 406.
[3] The flint was mined a mile away, on the opposite side of the Bresle valley.

superficial resemblance to Grime's Graves, which have an upper layer of sand mixed with flint nodules (p. 110).

A store of picks and deer-horn tools was discovered, and further, the flints found in and above the hearth level differed from ordinary neolithic implements in their freedom from patina and the freshness of their broken surfaces. The stone was grey but oftener black, with iron and manganese deposits. Bones of the ox, horse, and stag were recognized, but the fauna was badly preserved; and charcoal from the hearths was from the oak and ash. As special emphasis is laid on the absence of any trace of polish below the soil, it is not surprising that the flint-forms merge into the palaeolithic. There are indeed picks, chisels, and transverse axes, but it seems unwise to call these neolithic without qualification, in view of the typical cave-types in undisputed association with them, such as the side-scraper (*racloir*), graving-tool (*burin*), parrot-beak point (*bec de perroquet*), blade with battered back (*à dos abattu*), and core-scraper (*grattoir Tarte*), of which no less than eight specimens were found, and compared with those from Brassempouy. The occurrence of pottery apart from, and obviously earlier than, polished celts was commented on, and no less than 300 sherds were found, some with round handles (as in Belgium), but rarely ornamented with lattice and chequer patterns. One illustrated specimen is not unlike some rough markings on the chalk wall in one of the Cissbury pits.[1]

It is not suggested that the Campigny culture is contemporary with that of Cissbury and Grime's Graves, but rather that it belongs to a somewhat later stage which is revealed in an abundance of finds in the Thames Valley and on the chalk downs of Southern England, as well as in Scandinavia. In the Cissbury series may be found the rudimentary pick, a rough cylinder of flint pointed at the ends or furnished with a narrow chisel edge at one or both extremities. The typical pick does not seem to occur in the English flint-mines, and is only rarely patinated white, the majority being quite unchanged or turned to some shade of grey. This may be regarded as the rule, and another is that the long picks are less patinated than the short specimens, and for this if for no other reason are presumably later.

The discovery at Catenoy, near Clermont, Oise, of a culture similar to that of Campigny, gave rise to some interesting speculations on the part of Dr. Capitan.[2] Below the humus and superficial deposits, 12–16 in. from the surface, occurred palaeolithic cave-types, including gravers (coarser than those of La Madeleine), end-scrapers, also transverse axes (*tranchets*) and picks somewhat finer than at Campigny; bones of the ox, pig, and sheep; pottery fragments

[1] Campigny, fig. 47, and *Journ. Anthrop. Inst.*, vi. 440.
[2] *Congrès internat.*, Paris (1900), p. 211.

both coarse and fine, but no trace of polished flint. This culture was regarded as neolithic, an advance on Campigny and probably a development of it; but the possibility of a local facies is fully recognized, and a transition stage different from Mas d'Azil regarded as possible.

Time alone will show whether this equation is justified, but the idea of local facies is a fruitful one, and may explain much that is still obscure at Cissbury. A contrast has already been noted in development north and south of the Loire; and as the final separation from the Continent is generally assigned to the stage of La Madeleine, there can be little hesitation in grouping the finds of Southern England, especially the chalk area, with those of Northern France and Belgium. Whatever the exact sequence, there is something more than an accidental resem-

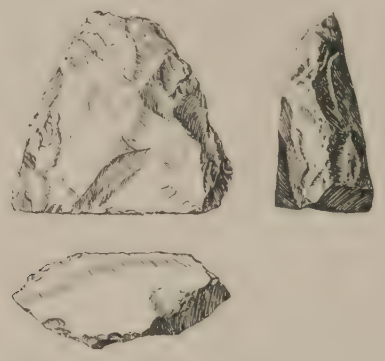


Fig. 40. Segmental tool, with side and base views; C. Arcona, Rügen. ½.

blance, for instance, between the products of Cissbury, Campigny, and Spiennes; and continental authorities have already linked the Campigny culture with the kitchen-middens of Denmark. Further, certain surface-finds named after Le Flénu, near Mons, Belgium, seem to belong to the Aurignac culture, though regarded as proving a recrudescence of eolithic barbarism by Dr. Rutot, whose good offices secured for the British Museum an interesting type series. The material used is not of the highest quality, though doubtless the best procurable in the circumstances; and it is interesting to see reproduced some of the forms rendered familiar by Aurignac finds elsewhere, such as the cone and the humped scraper or steep-ended plane, whereas the specimens from Élouges in the same neighbourhood are perhaps more truly allied to Campigny. Nor should it be overlooked that Dr. Rutot[1] has placed the industry of Le Flénu before that of Campigny or Spiennes, on the strength of discoveries at Avennes (Waremme, Liége), where flint was mined in prehistoric times. This would exactly agree

[1] *Bericht über die Prähistoriker-Versammlung in Köln*, 1907, p. 137; *Le Flénusien aux environs de Liége et en Hesbaye*, p. 3 (C.-R. du Congrès de la Féd. arch. et hist. de Belgique, Liége, 1909).

with the views now put forward with regard to Cissbury and Grime's Graves, and specimens recently acquired for the British Museum from Arcona in the Baltic island of Rügen are of the same character, including a typical segmental tool (fig. 401). These may or may not resemble the Rügen flints compared by Dr. Rutot with the series from Le Flénu, but the concordance is at least instructive. The facies therefore is not altogether local, but rather suggests a fundamental difference between the culture of areas rich in flint and that of Southern France, where the later Cave types were uniformly evolved. As the chalk covers a large part of Northern France as well as South-east England, it is permissible to trace this cultural divergence to climate, fauna, flora, and other local conditions, not necessarily to a difference of race.

Apart from its insular position, England should experience at least the severe winters of Quebec, the latitude of London being the same as the southern shore of Hudson Bay. But the proximity of the Atlantic in itself would mitigate the climate of Western Europe, and the Gulf Stream would have brought not only moisture but warmth to Southern England, at least since the Channel was formed. The effect of this on the flora and fauna of this country must have been considerable, and the series of discoveries made in recent years on the west coast of Norway are easier to understand when it is remembered that the Gulf Stream keeps open the harbours of Norway all the year round as far north as Hammerfest. A specially mild climate would fully explain the absence in the Aurignac period of cold-loving animals such as most of the mammoth fauna, and the absence of caves would inconvenience the larger beasts of prey, such as the cave-lion, cave-bear, and hyaena, while the chalk downs can never have provided enough cover or sustenance for large animals that take naturally to the forest. On the other hand, all the conditions were favourable to herbivores; and on the Downs, if anywhere, the red-deer, ox, goat, sheep, and pig would have found both food and security, each ministering in its own way to the necessities of man.

It will thus be seen that the standing objections to the Cissbury culture being palaeolithic are not insuperable, and were indeed discounted by various authorities years before some of the best evidence was available. The effect of such a theory on the old question of an hiatus has lastly to be considered.

This famous hypothesis is presented in a concise form by Dr. Rice Holmes,[1] who does not spare its principal English supporter. As his pages are crowded with references, it is only necessary here to allude to the published opinions of

[1] *Ancient Britain*, pp. 382–390: to the references there given may be added *Bull. Soc. d'Anthrop.*, 1895, p. 266 (Piette).

Prof. Boule,[1] a leading authority on the natural history side of the question. He holds that the work of Piette in the Pyrenees and Allen Brown[2] in England brought the hiatus-theory into discredit, and himself undertakes to prepare a list of species showing an insensible transition from the palaeolithic to the neolithic fauna. In connexion with the alleged zoological break Dr. Rice Holmes remarks most pertinently that

'the contrast between the palaeolithic and wild neolithic faunas ... implies no break at all, seeing that 31 of the 48 older species confessedly lived on:[3] it implies no more than is implied by the disappearance of the urus, the wolf, the wild-boar, and many other animals which were living in this island at a time since which it has been continuously inhabited by man. ... Arab horses, Siamese cats, and many other animals have been introduced into this country since the Christian era: yet the people who were here before their introduction did not become extinct.'

The difficulty all along has been to prove a connexion between Cissbury types and those of the river-gravels; the derivation of the neolithic celt from the former is obvious, and an unbroken development from the Drift is more than probable. Mr. Allen Brown seems to have been justified in regarding certain surface-finds at East Dean, Sussex, as earlier than neolithic, but the term 'mesolithic' which he applied to them can hardly be recommended. From what has been said above it may be concluded that many surface finds present so close a resemblance to typical French cave-relics as to justify their attribution to late palaeolithic times, and the issue is only obscured by the retention of a name which, if it does not create the gap that it professes to fill, at least exaggerates the length and importance of a transition stage. It may be that archaeologists will revert to the old view that the neolithic period was that during which flint implements were normally polished. In that case Cissbury and Grime's Graves would be excluded; and if analogy or identity of type counts for anything, the only alternative is to adopt the most widely accepted classification, and regard as palaeolithic not only these two leading sites, but many others of the same facies that have been, or will hereafter be, discovered.

[1] *L'Anthropologie*, 1894, p. 463.

[2] *Palaeolithic Man in N.W. Middlesex*; and *Journ. Anthrop. Inst.*, xxii. 66. Mention should also be made of Mr. W. J. Knowles's paper in *Journ. Royal Soc. Antiq. Ireland*, 5th ser., vii. 1.

[3] Of the nineteen, twelve migrated and seven became extinct.

VIII. *The Distribution of the Anglo-Saxon Saucer Brooch in relation to the Battle of Bedford*, A. D. 571. *By* E. Thurlow Leeds, *Esq., M.A., F.S.A.*

Read 1st February, 1912.

The investigation of the early history of England is beset with many difficulties and has furnished material for the widest conjectures. Prior to the Roman invasion our knowledge is confined almost entirely to such deductions as can be made by the aid of archaeology. But the difficulties by no means decrease with the period when England makes its first appearance in the pages of written history. Indeed, they might be said rather to increase, and perhaps of no period is this truer than of the times between the decline of the Roman power in Britain and the ultimate establishment of the Anglo-Saxon power. The records are, to say the least of it, of the barest nature, and present many problems of absorbing interest, towards the elucidation of which archaeology has already contributed not a little. In some cases, however, the evidence of archaeology appears to find itself in conflict with the witness of history, and it is one of these incongruities which I have set myself the task of endeavouring to investigate in the course of this paper.

To put the case shortly, the tripartite division of the Teutonic invaders rests on the accounts given by Bede in his Ecclesiastical History, and is accepted in the main as approximately correct. The archaeologists of the middle of the last century desired to bring the archaeology of the period into line with the historical accounts of the invasion. Thus they pointed out, after examination of the relics which had been found in the cemeteries of the three districts in which tradition has located the three tribal divisions of the Jutes, Angles, and Saxons, that certain classes of objects were more or less restricted to each of these areas. In consequence they designated these objects as Jutish, Anglian, and Saxon respectively. In no case was this distinction more applicable than in that of the brooches, which constitute the most outstanding feature of the Anglo-Saxon relics, and which lend themselves best to the typological method of inquiry. In a large measure their conclusions were correct. Thus the distribution of the round jewelled brooches coincides with the districts assigned to the Jutes, while the cruciform brooches belong principally to the area which the Angles are reputed to have occupied. To the third partner in the invasion, the Saxons,

were ascribed the fabrication of the saucer brooch in its two varieties, the saucer type proper, formed of a cupelliform piece of metal cast in one piece, and the allied type to which Mr. Reginald A. Smith, F.S.A., has given the name of the 'applied' brooch. It differs from the foregoing variety in that it is constructed of hammered bronze, the rim being soldered on to the bottom. The ornamentation was not executed on the surface of the brooch itself, but was embossed on a thin disc of metal, which was then soldered on to the bottom of the saucer-shaped framework. But, unlike the other two divisions, the distribution of this type had to be narrowed down to one particular branch of the Saxon peoples, namely the West Saxons. It does not occur in the districts in which the East Saxons are said to have settled, nor apparently was its occurrence in the South Saxon kingdom then recorded. And the number even now known from Sussex is so small, compared to those found in Wessex, that they might have been regarded as importations from or due to relations with the latter region, though, as will be seen, there is not much ground for such an assumption.

But these brooches have also been found in other counties which cannot be regarded as having come within the sphere of the activities of the West Saxons during the pagan period. The explanation given above, which might conceivably have been valid in the case of Sussex, has been adopted in these instances also. The purpose of this paper is to inquire whether this explanation, when thus applied, can be considered as a satisfactory one or whether some other reason should be sought for.

The distribution of this brooch-type is certainly of a widespread character. Few of the counties situated, roughly speaking, east of a line drawn from the Wash to the Severn have failed to produce at least one example. The only exceptions, I believe, are Middlesex, Hertfordshire, Essex, and Norfolk. Specimens are known even from counties north of that line, namely Lincolnshire and Yorkshire.[1] A detailed list of the cemeteries in which they occur and the numbers in each case will be found appended to this paper.

Any attempt to deal with the evolution of these brooches must be based on an examination of the motives employed in their ornamentation. Unlike some other types of Anglo-Saxon brooches, for example the cruciform type, the form remains constant throughout, but the ornamentation varies perhaps more widely than on any other type, perhaps because its shape was peculiarly well adapted to the use both of geometric and zoomorphic patterns.

Patterns of the former class are in a large measure self-evident. Their origin and the conclusions which may be deduced from their use and style will appear in the course of the paper. In the case of the zoomorphic motives, however,

[1] See Appendix, Schedule II.

perhaps a few words are necessary by way of preface, in order to explain the lines on which the examination of motives of this class will be conducted hereafter.

I have throughout made use of the system elaborated by Salin in *Die altgermanische Thierornamentik*. In that work he traces the evolution of the Northern zoomorphic ornament in vogue during the period called the Later Iron Age by Scandinavian antiquaries. He examines its development from its earliest stages, in his opinion an outgrowth from provincial Roman ornamental motives as in fig. 1, down to the ninth century, and shows that this development progressed along definite lines. Certain stages of this progress are marked by striking changes and innovations, and these he has signalized by dividing the history of this class of ornament into three periods which he has designated as Styles I, II and III. He has noted that these different so-called styles are used in the decoration of objects which show in an equal degree the gradual change of fashion in their style or shape. By the aid of certain fairly well ascertained dates he is able to arrive at a fixed period within which these changes of fashion and the evolution of the zoomorphic ornament which coincided with them must have taken place. He has thus found it possible to assign an approximate period for the duration of his three styles. He places the beginning of Style I about A. D. 450 and considers that it lasted down to about 600. Style II covers, roughly speaking, the seventh century, while Style III, which falls entirely outside the scope of this paper, lasted from about A. D. 700 to 850. He examines a few examples of this zoomorphic ornament as it occurs on objects found in England, and finds that in the main its development agrees with the conclusions to which his study of continental examples has led him.

Fig. 1. Bronze bracelet-tab. Amiens, France. (Archæological Museum.) ½

For the purpose of the present investigations into the ornamental motives employed on the saucer brooches, I have divided the country over which these brooches are distributed into two areas (fig. 2). These are called hereafter the Western and Eastern areas respectively. In the Western area are included all those cemeteries which are situated on the river systems which flow southwards, extending from the Thames to the Severn. The Eastern area comprises the cemeteries associated with the rivers which empty into the Wash. It may seem at first sight an arbitrary division, but I hope to show that it is not so and that archæology is here in agreement with geography.

[1] There are some outlying examples, but they may for general purposes be neglected, as they do not affect the main issue.

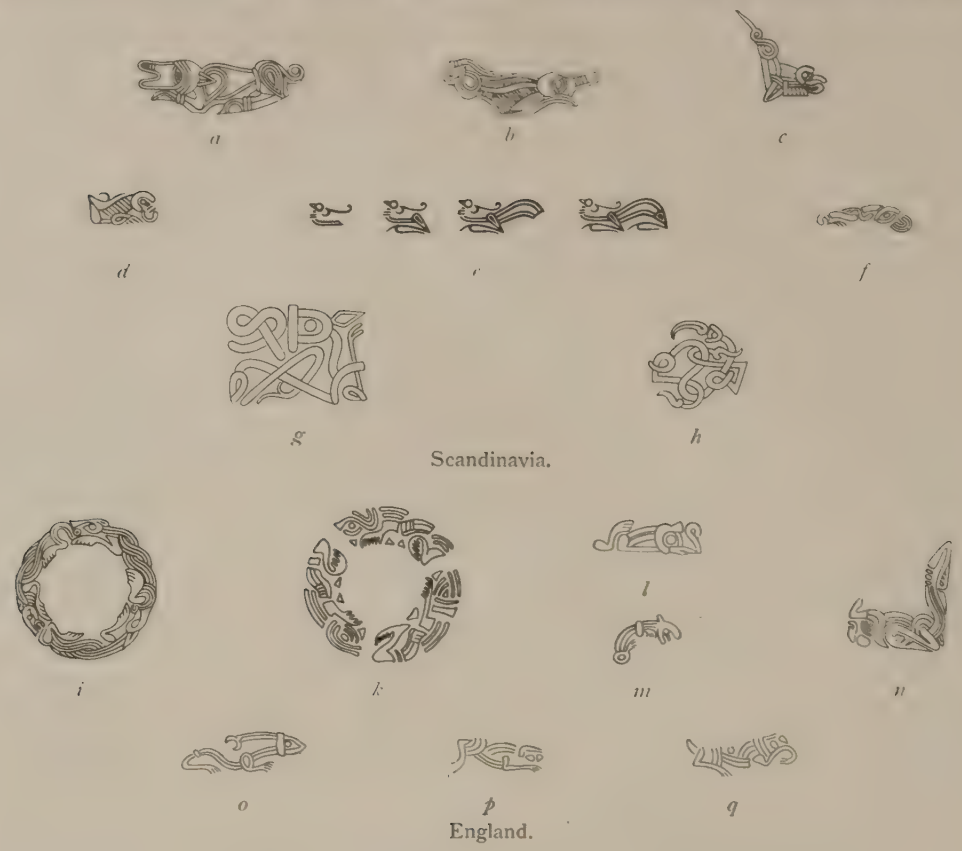


Fig. 2. Examples of Zoomorphic Ormament, Style I. (*a-h*, *m* and *n* after Salin.)

Fig. 3. Examples of Zoomorphic Ornament, Style II (after Salin). ½.

The saucer brooches of the Western Area.

It is a remarkable fact, and one that has been fully commented on by Mr. R. A. Smith in his chapter on the Anglo-Saxon remains found in Hampshire in volume I of the *Victoria County History of Hampshire*, that the archaeological remains are

Fig. 4. (The dotted line marks the line of division adopted in this paper)

in no way commensurate with the importance attached to this county in the history of the West Saxon invasions, as recorded by the early chroniclers. And the same applies for practical purposes to Wiltshire, where outside the cemetery at Harnham Hill, Salisbury, no saucer brooches occur except in three sites in the north of the county, one situated on the Thames and the others not very distant from that river. A few finds in the neighbourhood of Devizes and the recent discovery of cremation urns at Christchurch, Hampshire, may possibly be corroborative of an advance up the Dorsetshire Avon. It is, however, from the Thames Valley that by far the larger number of examples of the saucer brooch come, and it is from this district that most of my material is drawn, with brief reference to others of interest.

First, as the decorative motives belonging to the geometric class are particularly numerous in the Western area, we may direct our attention to one from Fairford now in the British Museum. This example is figured by Mr. R. A. Smith[1] as one of the earliest in point of decoration.

The ornament exhibits strong traces of the survival of Roman designs, which must have persisted among the Romano-British population down to the time of the great invasions, and some of which may possibly even have met the gaze of the invaders in the mosaic floors of Romano-British villas. On the brooch in question the border is executed in a band of guilloche or cable pattern, while the central motive bears ample witness to its Romano-British origin. Mr. Smith sees in it an imitation of the amazon-shield pattern, but while that motive may well have been present in the model from which the craftsman derived the whole design, it appears that he fully intended to portray the human face. It is, of course, conceivable that a true copy of the design was contemplated, but the copyist seems to have fallen even here under the magic of the zoomorphic motives which at the end of the fifth century began to assert their predominance over all other schemes of ornamentation in the Teutonic world. The motive of the human face was so common already in the native lands of the invaders as to render it wellnigh impossible that they should have neglected it at the earliest period of their occupation of English soil. This much seems to be proved by its extreme frequency at a later date, and a close examination of the original in the British

Fig. 5. Applied brooch, Fairford (British Museum). ½.

[1] *Arch. Journ.*, lxv. 80.

Museum will, I think, prove that on the Fairford brooch this motive had already found a footing in this country.

This is further borne out by an almost identical brooch (pl. XXVI, fig. 1) found at Reading (now in the Public Museum of that town). On it the same design is employed, with the difference that the equally Roman egg-and-tongue pattern is substituted for the guilloche in the border. In this case the faces are unmistakable, as they are wholly detached from the inner ring and the nose is clearly defined. In consequence these brooches belong rather to the zoomorphic

Fig. 6. Applied brooch, Fairford. (Ashmolean Museum). ½.

Fig. 7. Button brooches. Nos. 1, 2, 4, and 5, Chatham, Kent; no. 3, Brighthampton, Oxon. (Ashmolean Museum). ½.

than the geometric class, and have been scheduled as such in the lists appended to this paper.

Yet another applied brooch from Fairford itself[2] bears a somewhat similar design (fig. 6). Again the guilloche border is used, but the centre is composed of six wedge-shaped compartments, each containing an undeniable though bald representation of a human face. This type of face appears most frequently on the diminutive type of saucer brooches usually termed 'button' brooches. An example from Chatham Lines, Kent, in the Douglas Collection in the Ashmolean Museum, furnishes a good instance of the treatment of the eyes and nose as they appear on the Reading brooch (fig. 7).

What at first sight appears to be this guilloche design, but in reality is a tendril motive, a no less Roman survival, occurs on a brooch found at Chatham,

[1] *Journ. Brit. Arch. Assoc.*, l. 152, fig. 4.

[2] Wylie, *Fairford Graves*, pl. iii, fig. 4.

Kent (pl. XXV, fig. 1), now also in the Douglas Collection. It is of rather small size and simple in design, but an unusual feature is the gilding, which is of a deep copper colour, quite unlike the bright yellow gilding commonly employed. A central boss was originally occupied by a setting of glass or garnet, now lost. It is almost undoubtedly of Kentish fabric, and the employment of the tendril motive stamps it as of early date (see also below, p. 190).[1]

The same design occurs again on a brooch found at Harnham Hill[2] near Salisbury, while the centre is occupied by a star or pointed rosette with incurved sides. This type of star is of extremely common occurrence on saucer brooches. Again, its origin is to be sought among Roman motives, e.g. on pavements where a circle is bounded on the inside by segments of circles forming a framework to some central design. On many examples, as on saucer-brooches from Brighthampton and near Abingdon[3] (pl. XXV, figs. 4 and 6), it has a double outline, and in the only instance in which the design is used on applied brooches, namely, at Fairford (pl. XXV, fig. 3), the two lines are divided by a row of dots,[4] a not unusual method of delineating the bodies of animals on brooches ornamented with zoomorphic patterns during this period.

Mr. Smith[5] dates the first-mentioned Fairford brooch to the end of the fifth century. Certainly the intricacy of the design suggests that it must be reckoned among the earliest examples, but it may be suspected whether it is the work of a Teutonic craftsman. It looks far more like Romano-British work. The place of its discovery also renders the question of its date a little difficult. If any reliance can be attached to the Chronicle, an effective settlement could hardly have been established at Fairford long before the capture of Cirencester in 577 B.C. Whether this be so or not, it is more than likely that both this brooch and the example noted above from Reading are by the same hand. They both also belong to a large class ornamented with geometric designs. These designs are almost entirely restricted to this area, and though from their character and execution many of them may belong to an early period of the Saxon occupation, they are, as I hope to show, so peculiarly a feature of the West Saxon ornament that they must be regarded as Roman survivals which took the fancy of the invaders, and were probably in many cases executed to their order by

[1] Only a short while after this paper was read before the Society, I obtained most interesting corroboration of the persistence of Roman designs alongside of advanced Teutonic motives. In the same cemetery which was described by Rolleston (see below, p. 167) was found a pair of applied brooches decorated with a decadent zoomorphic pattern within a guilloche border. Advantage has been taken of this opportunity to publish the best example (pl. xxvi, fig. 3).

[2] *Archaeologia*, xxxv, pl. xii, fig. 11.

[3] In the Ashmolean Museum, Oxford (Evans Coll.).

[4] Three examples in the Ashmolean Museum; for two others see *Archaeologia*, xxxvii. 146, fig. 4.

[5] *Op. cit.*, p. 80.

1. Chatham, Kent.

2. Fairford, Glouces.

3. Fairford, Glouces.

4. Brighthampton, Oxon.

5. Horton Kirby, Kent.

6. Near Abingdon, Berks.

7. [illegible], Berks.

8. Bidford, Warwick.

9. [illegible]

WESTERN AREA. GEOMETRIC DESIGNS I

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Romano-British craftsmen. The theory of the total extirpation of the inhabitants[1] hardly finds much support at the present day.

In examining these designs mention may be made first of certain examples of the star-pattern. These are accurately designed and executed with long sharp points and well-defined angles. Of brooches thus ornamented may be noted a saucer brooch from Fairford[2] (pl. XXV, fig. 2), and applied brooches from Basset Down[3] and Harnham Hill, Wilts.,[4] and Long Wittenham, Berks.[5] This same feature of accurate and careful chasing is noticeable also on some of the brooches, always saucer-shaped, decorated with running spirals. Brooches showing such workmanship seem to claim precedence in point of date to others of the same class, e.g. pl. XXV, fig. 8.

Mr. Smith has concluded from the *facies* of the various relics found at Mitcham, Surrey,[6] that they were deposited at an early period of the invasion. The find included no less than four saucer brooches, one decorated with the star with incurved sides mentioned above (p. 166), and three with spirals, one pair and one single. In all these the execution is remarkably clean and sharp. Those on the pair of brooches are surrounded by a corded band, and the interstices between it and the outer curves of the spirals are occupied by dots. A parallel to this, with corded border but without the dots, was found at Droxford, Hants.[7] A third example comes from Woodstone, Hunts.,[8] though the evidence in this case in favour of an early date is somewhat negative. Two brooches with equally fine spirals come from Frilford, Berks.[9] (pl. XXV, fig. 7). They are remarkable for their extraordinarily deep pin-catches, reminiscent of those on North German fibulae of the second century A. D. I shall notice this feature later. Lastly, the same clean-cut spirals occur on a pair of brooches from Brighthampton, Oxon.[10] All these cemeteries can for various reasons be classed among the early ones in this district. At Frilford Professor Rolleston recorded a succession of burial customs, ranging from the Late Roman period onwards. Neither the star nor the spiral design as it appears on the saucer brooches are essentially Teutonic in origin, and they may well be native survivals in this country. The running spiral is known from Romano-British sources, e.g. a pavement at Helpstone, Northants.[11] It is true that the spiral is not unknown in Teutonic art. Indeed, it is a common decorative design with a widespread diffusion throughout the Teutonic

[1] J. R. Green, *Short History of the English People*.
[2] Wylie, *Fairford Graves*, fig. on p. 16.
[3] *Wilts. Arch. and Nat. Hist. Mag.*, xxviii, fig. 19.
[4] *Archaeologia*, xxxv, pl. xii, fig. 9.
[5] *Ibid.*, xxxix, pl. xi, fig. 4.
[6] *Surrey Archaeological Collections*, xxi. 1 ff. and figs. 2 and 12. The odd brooch with spirals is not figured. See also *Proceedings*, 2 S., xxi. 3 ff.
[7] *Proceedings*, 1 S., xix. 128, fig. 1.
[8] *Journ. Brit. Arch. Assoc.*, n. s., 1899, v. 346.
[9] In the Ashmolean Museum.
[10] De Baye, *Industrial Arts of the Anglo-Saxons*, pl. viii, fig. 4.
[11] Artis, *Durobrivae*, pl. xii.

world, but it is noteworthy that in the majority of cases it is clearly derived from the Roman tendril pattern, in which the spirals are presented alternately upwards and downwards, as on the side of the head of a large square-headed brooch from

a *b*

Fig. 8. Saucer brooches. *a.* Mentmore, Bucks.; *b.* Long Wittenham, Berks. (British Museum). ¼.

the Isle of Wight. Only on two pairs of brooches from Fairford[1] and Oxfordshire[2] is the ring of spirals broken and terminates as in the tendril pattern proper.

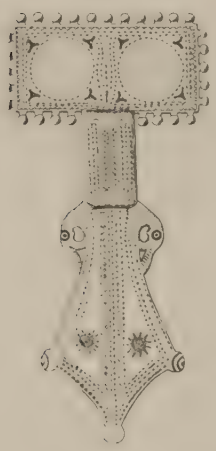


Fig. 9. Silver brooch. Eidesten, Norway. ½.

Along with the running spirals may be classed one or two other designs, firstly a star-like or catherine-wheel motive with recurved points or arms, a good example of which with five points occurs on a saucer brooch from Upton Snodsbury, Worcestershire.[3] It is also used with the arms turned in the opposite direction on a brooch found at Mentmore, Bucks.[4] The second is a ϒ-shaped motive which appears on a saucer brooch from Long Wittenham, Berks. This latter design also is essentially Roman in its origin. The catherine-wheel design on the Upton Snodsbury brooch might well have been copied from the mosaic pavement at Woodchester,[5] Gloucestershire, while the Roman character of the ϒ-design is demonstrated by its occurrence on a bronze buckle and fastening of provincial Roman work found at Maxglan, near Salzburg.[6]

I have only been able to discover one instance of the occurrence of the 'catherine-wheel' motive in Scandinavian art, namely on a

[1] *Fairford Graves*, fig. on p. 14.

[2] *Catalogue of Londesborough Collection of Rings and Ornaments*, no. 62.

[3] *V. C. H. Worcester*, vol. i, coloured plate, fig. 9. Cp. Artis, *Durobrivae*, pl. xix, pavement found at Mill Hill, Castor.

[4] *Archaeologia*, xxxv. 381.

[5] Lysons, *Antiquities of Woodchester*, pl. vii.

[6] Riegl, *Die spätrömische Kunstindustrie in Oesterreich-Ungarn*, pl. xviii.

large silver square-headed brooch from Eidesten, Norway,[1] belonging to a class of brooches assigned to the early part of the fifth century, a period when it is thought that Norway had not as yet come into direct contact with England. The designs on these silver brooches are almost always undoubted survivals from the period of strong Roman influence on Northern art.

Another interesting design consists of a rhomboidal or circular centre with swastika-like arms. The evolution of this pattern can be traced from a well-known Roman motive, namely a cross formed of two intertwined loops.[2] The gradual stages of transformation are well illustrated on a gold bracteate and a gold brooch set with garnets from Charnay, Saône-et-Loire, France,[3] especially on the latter. The design which resulted from a disintegration of the loops occurs on brooches from East Shefford, Berks.,[4] and Brighthampton, Oxon.[5] (pl. XXV,

a *b*

Fig. 10. *a*. Applied brooch, Long Wittenham, Berks.; *b*. Saucer brooch, Bishopstone, Bucks. ½.

fig. 9), surrounded by an egg-and-tongue border, while what may be debased copies come from Kemble, N. Wilts.,[6] and Broughton Poggs, Oxon.[7] A parallel from French soil is afforded by two button brooches from Amiens in the Evans Collection. One noticeable feature of relics belonging to the early Frankish period is the large number of designs of unmistakable Roman origin.

In the same category may be placed a cross with spirals branching out on either side of each arm. It is to be seen on an imperfect applied brooch from Long Wittenham,[8] and with certain variations on a saucer brooch from Bishopstone, Bucks.,[9] with a border of 'pot-hook' pattern which will be noticed shortly; it occurs also on a Kentish brooch from Horton Kirby, there associated with grotesque faces (pl. XXV, fig. 5). This design is known on a large square-headed

[1] Aus Forsinger til Norske Fortidsmindesmærker Bevaring. *Aarsberetning* for 1878, p. 84, fig. 9a.
[2] e.g. Artis, *Durobrivae*, pl. xix, on a mosaic pavement.
[3] *Commission archéologique du Dépt. de la Côte-d'Or*, v, pl. xii, figs. 2 and 6.
[4] In the British Museum.
[5] *Archaeologia*, xxxviii, grave 46 (not figured).
[6] *Ibid.*, xxxvii, p. 114, fig. no. 5.
[7] Figured, *Proceedings*, 1st ser., iv. 73.
[8] *Archaeologia*, xxxviii, pl. xix, fig. 7.
[9] *Records of Buckinghamshire*, v, pl. ii, 1 and 2.

brooch from West Gotland, Sweden,[1] not indeed a very early specimen, but probably not later than A. D. 500. The earlier stages of this motive may be seen on brooches of the same type from Skane, Sweden,[2] and from Marchélepot, France,[3] a cemetery which has yielded two of the earliest brooches of this period found in Western Europe. In this connexion it may be noted that the design in question is executed on the two latter examples quoted in a technique derived from wood-carving, the so-called *Kerbschnitt* or *Keilschnitt*, which presents the design in a negative form. This method of ornamentation, also employed on one of the two early brooches above mentioned —the second is undecorated—was very extensively used to adorn buckles and the like which exhibit in their form and execution undeniable Roman feeling. When, however, the motive is presented positively, i.e. in relief against a flat background, it seems to belong to a later period, subsequent to its adoption by Teutonic craftsmen, and as such can only in a secondary sense be regarded as of Roman origin.

Next, on a pair of saucer brooches from Fairford[4] (pl. XXVI, fig. 2), occurs a variation of the spiral which points to a Teutonic origin. It consists rather of hooks than of spirals proper; a good example is to be seen on a silver brooch of unusual form from Galsted, Schleswig (Salin, fig. 394). It occurs even in more southerly parts of the Teutonic world, e.g. on a silver square-headed brooch from Charnay, Saône-et-Loire.[5] Salin derives this hook motive from the hooks of the acanthus tendril; its principal interest, as it occurs on the Fairford brooches, lies in its association with zoomorphic ornament. The outer corners of the Schleswig brooch are also occupied by figures of animals, described in detail by Salin as early examples of his Style I, the beginning of which he places in the latter part of the fifth century. On turning to the Fairford brooches it will be found that though they correspond in point of size and general appearance, yet they differ materially from one another so far as the design is concerned. In the one the hooks forming the border branches form a central stem; in the other one row is attached to the outer, the other to the inner ring, so that they abut on one another in the centre. Again, in the one brooch the two animals surrounding the central boss are portrayed with all due regard to the relative size and position of the limbs, while in the other a large portion of the available space has been allotted to the limbs to the detriment of the body and neck. In the main the style of the animals is in full accord with a fairly early period of Salin's Style I, and their fabrication may be placed in the first half of the sixth century.

[1] Salin, *op. cit.*, fig. 130. [2] *Ibid.*, fig. 128.

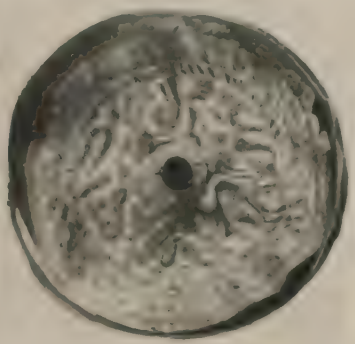
[3] Boulanger, *Cimetière Franco-Mérovingien et Carolingien de Marchélepot*, pl. iv, fig. 1.

[4] Wylie, *Fairford Graves*, pl. v, fig. 2 (a combination of the decoration of a pair of brooches slightly differing in detail).

[5] Salin, *op. cit.*, fig. 395.

1. Reading, Berks.

2. Fairford Gloucs.



3. Frilford, Berks.

4. Fairford, Gloucs.

5. Brightthampton, Oxon.

6. Fairford, Gloucs.

7. Rochester, Kent.

8. E. Shefford, Berks.

WESTERN AREA. ZOOMORPHIC DESIGNS 3

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At this point it appears desirable to utter a warning against too strict an application of Salin's method to English examples of zoömorphic ornament. A close examination of many specimens of this ornament as known in England has convinced the writer that it is necessary to bear in mind the gradual lapse of time from the date of the first landing of the invaders in strength and consequently the ever-lengthening separation from Teutonic originals. These two considerations, coupled with the fact that no example that can be definitely asserted to have been executed in Denmark or North Germany has been found in the West-Saxon area, demonstrate that there need be no cause for surprise if it is found that the modifications in this ornamental style tend to advance in this country along lines somewhat different from those which can be traced in Northern Europe.

In a pair of brooches from Long Wittenham[1] the animal is treated in a manner strongly resembling that of the Fairford brooches, particularly in the details of the head. The manner in which the bodies, in order to fill out the space, are duplicated and in one case triplicated in a kind of guilloche design (fig. 2. i), and possibly under influence of that motive, seems to support strongly the reservation which has been put forward above. The same feature is to be seen on a square-headed brooch from Hedenmarkens Amt, Norway (Salin, fig. 538), the details of which show the approach of the peculiarities of Salin's Style II, i. e. *c.* A. D. 600, but in this example the clear demarcation of the limbs by means of curved lines defining the junction of the legs with the body, which is well seen in the Long Wittenham brooches, has almost disappeared or these lines are so misplaced as to prove that their purpose was no longer understood.

It remains to notice other examples of zoomorphic design from this area. The first is represented by a pair of saucer brooches from Fairford[2] (pl. XXVI, fig. 4). They are also figured by Salin (fig. 703),[3] who regards the animal figured in the text as typical of a later stage of his Style I. It is to be regretted that he omitted to figure the other two animals which fill the circle, as in all three cases the treatment of the head differs, thus affording another excellent instance of the variations in vogue contemporaneously, such as were noted on other Fairford brooches. In passing, attention may be directed to a saucer brooch from Oddington, Glouces., which, as far as one can judge from the unsatisfactory drawing in the *Gentleman's Magazine* for April, 1787, may well have been the work of the same craftsman.

From Fairford[4] too comes a belt-plate with an oblong garnet set in the

[1] *Archaeologia*, xxxviii, pl. xix, fig. 4.

[2] *Fairford Graves*, pl. iii, fig. 5.

[3] The provenance is wrongly given as Kent in the text, though correctly stated in the inventory at the end of the book.

[4] In the Ashmolean Museum (Evans Collection).

centre. It is identical with that from Kent figured by Salin, fig. 701, as his first example of the later period of his Style I in England.

Lastly, on a pair of applied brooches from Brighthampton, Oxon.,[1] a somewhat confused medley of animal limbs appears, but among this confusion some interesting details are noticeable (pl. XXVI, fig. 5). One is the employment of an animal with its head turned backwards and separated from the neck by a perpendicular bar. The head is of a type well known from the pendent heads which are placed on each side of the foot of the large square-headed brooches. The demarcation of the head from the neck finds no parallel in Teutonic lands, but recalls the early period of Style I, when it is common to define the junction of the foot and the leg by such a bar.

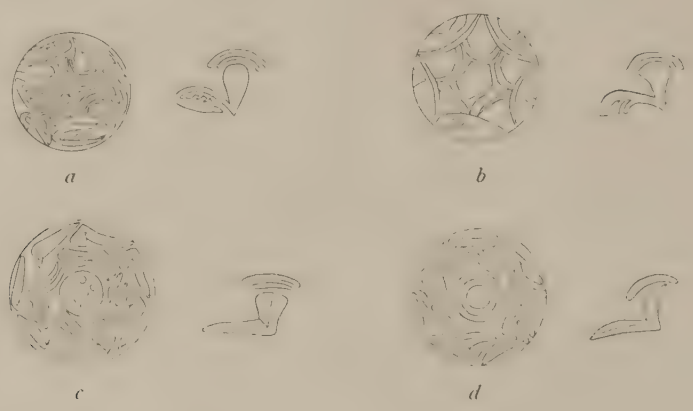


Fig. 11. Examples of 'leg-design' on saucer brooches. *a.* Saxonbury, Sussex; *b.* Chatham, Kent; *c.* Long Wittenham, Berks., &c.; *d.* Haslingfield, Cambs. ½.

Many of these brooches (e.g. pl. XXVI, figs. 7 and 8), particularly of the saucer type, from their ornamentation belong to a later period of the settlements, but it is not proposed to treat them in detail, as unnecessary for the immediate purpose of this paper.

One type, however, deserves closer notice, as it belongs peculiarly to the Western area, and in one of its forms (e.g. pl. XXVI, fig. 6) to quite a restricted portion of that area, thus affording proof positive of its local fabric. It has been found at Long Wittenham, Berks.[2] (two examples), Filkins, Oxon.[3] (three), and Fairford[4] (three). Its main feature is the central design, consisting of what appear to be repeated animal legs (fig. 11 c). That this is actually so is proved by

[1] *Archaeologia*, xxxviii, pl. iii, fig. 9.
[2] *Archaeologia*, xxxix, pl. xi, fig. 3.
[3] *Ibid.*, xxxvii. 142 (Mayer Collection 7557), and Mayer Collection 7563.
[4] *Fairford Graves*, pl. iii, fig. 1.

other brooches presenting a less advanced stage of stylization found in Sussex and Kent. Two found at Saxonbury, Sussex,[1] are ornamented with the design shown in fig. 11 a, and one from Chatham, Kent,[2] with that shown in fig. 11 b. In both these the legs are unmistakable, and their existence justifies the ascription to this class of a pair of brooches from Haslingfield, Cambs. (fig. 11 d), which might otherwise have been easily placed among the geometrically ornamented series.[3] It will be seen that while the upper part of the leg in a and c is defined by two curved lines (in two instances in the Sussex examples even by three), in the Kentish and Cambridgeshire brooches one line suffices. Types c and d must certainly be placed late in the sixth century, if indeed they do not belong to the seventh.

One noteworthy fact is brought out by the examination of the brooches from this area, namely, that it is wellnigh impossible to single out any one cemetery as earlier, archaeologically speaking, than the rest. The Fairford graves have produced relics which cannot be dated later than others from Reading, Long Wittenham, etc. This state of things brings archaeology into conflict with the Chronicle, unless it is permissible to conjecture that those objects from Fairford which were made in the first half of the sixth century had been treasured for some considerable period prior to their deposition in the graves of their owners.

It seems certain that the main line of advance was along the Thames Valley;[4] all the settlements lie in the vicinity of the river or on one of its tributaries at no great distance from the main stream. But unless the theory of heirlooms may be used at will to explain the presence of early objects in what would otherwise, both on historical and geographical grounds, appear to be late cemeteries, the occupation of the upper reaches of the Thames must have been almost contemporary with the establishment of settlements at Long Wittenham and elsewhere lower down the river. And further, if the Chronicle may be believed, this advance must have taken in part an overland route, for the stronghold of Eynsham was only captured about A.D. 571, and must have effectually barred any progress by water before that time. Some indication of an overland route is perhaps afforded by the Frilford cemetery. Here Professor Rolleston noted a succession of burial customs extending from Romano-British times down to what he surmised to be Saxon Christian interments. There is not much doubt that it was used by the Saxons at an early date.

The necessity for resorting to conjectures such as the above, in order to

[1] Lewes Museum, *Sussex Arch. Coll.*, xxxviii. 177 ff.

[2] Ashmolean Museum (Douglas Collection).

[3] A parallel to the Haslingfield examples from Northfleet, Kent, is now in the Maidstone Museum.

[4] This statement does not carry with it any absolute denial of the veracity of the traditional account of the West Saxon conquest. A sharp distinction should, however, be drawn between bands of immigrants accompanied by their families and a rapidly moving force of armed invaders.

reconcile the archaeology of the period with the written records, shows clearly that one or other of them must be somewhere at fault. I believe with all due deference to the historians that the fault does not rest with the tangible evidence of archaeology, and that, while the Chronicles perhaps contain the gist of the matter, no very exact reliance need be placed on the dates as such.

A further point to be noticed in connexion with the saucer brooches from Wessex is the comparative scarcity of good examples of early zoomorphic ornament. Geometric designs predominate, and in a large number of instances these can be traced directly to Romano-British sources. The reasons for this I shall attempt to indicate at a later stage. And it is possible that the loan from Romano-British art in this country was not confined to geometric motives. The mouth of one scabbard from Brighthampton is decorated with an arrangement of spirals quite classical in style, while on the chape of the same sword may be seen animals indicated by an incised outline. These have nothing in common with later Teutonic models, but belong to the period of transition when all attempts at naturalism had not been given up, and Teutonic art had not shaken itself free from the influences spread by Roman civilization. Parallels are afforded by buckles from near Sedan, Dépt. Ardennes, France, and from Hungary.[1] Swords are well known to have been highly prized and handed down as heirlooms, but there is nothing in the ornamentation of the Brighthampton scabbard which (though such a conjecture is not excluded) absolutely necessitates its ascription to a continental workshop. It can well have emanated from the same Romano-British source as most of the designs on the brooches. Some of the examples known from the Continent, two of which Mr. Smith has cited in his paper,[2] will be mentioned hereafter. What appears to be the embossed silver disc of an applied brooch, now in the Evans Collection, was found at Waben, near Montreuil, north-east of Calais. Within a Roman egg-and-tongue border are four full-face animal heads with erect ears alternating with four rosettes. There appears to have been a setting in a central rosette (fig. 12).

Fig. 12. Silver disc. Waben, North-east France. (Ashmolean Museum). ½.

The Saucer Brooches of the Eastern Area.

Attention must now be directed to the Eastern Midlands, and examination made of the rich material for archaeological study which this area has yielded from a large number of cemeteries.

[1] Salin, *op. cit.*, fig. 338, and Riegl, *Die spätrömische Kunstindustrie*, pl. xxii, fig. 5.
[2] *Arch. Journ.*, lxv. 80.

At the outset it should be observed that, except for the battle of Bedcanford (identified with Bedford) in 571, the Chronicle is absolutely silent about the history of this district during the early part of the Anglo-Saxon invasions, so that there is all the greater need for a close study of the antiquities in the hope that typology may in some measure supply the information which history has neglected to provide.

It has been noted above that the saucer and applied brooch-types are by no means absent from this area. Not only so, but they are present in large numbers. Reference to the table appended to this paper will suffice to demonstrate the truth of this assertion, and note should be taken of the striking disparity in the proportion of types in the two areas, first the predominance of geometric designs in the West and of zoomorphic ornament in the East, and secondly the prevalence of the saucer brooch in the West and of the applied type in the East. The division of the whole area over which this class of brooches is diffused is admittedly of a somewhat arbitrary character, as the county boundaries were at that time non-existent. It is, however, conditioned to some extent by the facts recorded about the West Saxons, in particular the battle of Bedford, but even more so by geographical considerations, and therefore for convenience a county division has been adopted. Some of the material from the Eastern area may belong more properly to the Western area and vice versa. But the proportions mentioned above will probably suffer no appreciable change by such transferences as may be found necessary by further research, and in any case the present investigation is not seriously affected thereby.

The greater part of the material from the Eastern area is distributed amongst four Museums, namely, the British Museum, the Museum of Archaeology and Ethnology at Cambridge, the Northampton Museum, and the Ashmolean Museum, Oxford. The rest is for the most part preserved in private collections.

For reasons which will become apparent later I have elected to begin with the more easterly cemeteries. From Norfolk, Essex, and all but the north-west corner of Suffolk, none such is known. In the immediate neighbourhood of Cambridge, however, an extensive group of cemeteries was brought to light at various times during the last century. The majority of these lay to the south-west of Cambridge. Mention may be made of Barrington,[1] Haslingfield, Edix Hill Hole, Orwell,[2] and Malton Farm. To the south-east lay the cemetery on Linton Heath[3] (104 graves), and to the east that of Little Wilbraham (188 graves and 100 urns), both excavated by the Hon. R. C. Neville, the author of *Saxon Obsequies*, in which the relics from the latter cemetery are published. Numerous interments, amongst which cremation predominated, have also been found on the site of Girton College.

[1] *Cambr. Ant. Soc. Comm.*, v. 5. [2] *Proceedings*, v. 380. [3] *Arch. Journ.*, xi. 95.

Everything points to large settlements of long duration in this district, one which is usually associated with the Angles, on account of the prevalence of cremation and the use of the large cruciform brooch. These two peculiarities do not, however, quite harmonize, as by far the greater number of the cruciform brooches have been found with skeleton interments. There must have been a considerable fusion of kindred races or tribes wearing similar ornaments, but using different burial rites.

In the following pages an examination will be made of some of the saucer and applied brooches from this and other settlements of what has been designated the Eastern area, and an attempt will be made to prove the source of these brooches.

Probably the most interesting of all is a pair of applied brooches found at Barrington, one of which is figured in the volume of the *Cambridge Antiquarian Society's Communications for* 1883 (vol. v, pl. III, fig. 2). The reproduction of the design is, however, totally inadequate; a photograph of the original is given on pl. XXVII (fig. 2).

The first glance shows a design quite unfamiliar on English brooches of the early Anglo-Saxon period, namely, the human figure rendered in profile. The human face is well known on the button brooches and other circular types and on various parts of the large square-headed variety, but nowhere else does an attempt to reproduce the whole human figure in profile appear. A wide border is filled with a succession of such figures adapted to the width of the border in an ingenious manner. The head, neck, and one arm—only one is shown—are drawn first, perpendicularly to the rim; behind is the body in three parts, namely, the trunk, the hip, and one leg, the last degenerated into a tail-like appendage. Any one who seeks for parallels to this portrayal of the human figure in the mother lands of the invaders must be struck by one fact, namely, that the human figure is never used on the later examples, but is always associated with other zoomorphic design either of the earliest period of Salin's Style I or of a period prior even to that. Consequently there exists no justification in any case for dating its use subsequent to A. D. 550, and there appears to be ample reason to doubt if it was employed in Northern Europe much after the year 500. The nearest parallel is to be seen on the famous square-headed brooch from Sjælland, Denmark,[1] on which also occurs an animal, which Salin[2] describes as a typical example

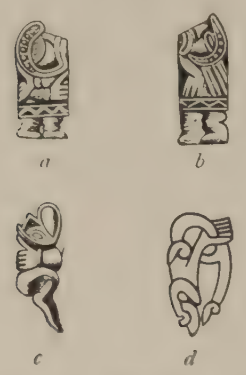


Fig. 13. *a c.* Sjælland; *d.* Skåne (after Salin). $\frac{1}{1}$.

[1] *Ant. Tidskr. f. Sverige*, xi. 3, fig. 11.

[2] Salin, *op. cit.*, p. 224.

of the earliest period of his Style I, i.e. of the latter half of the fifth century (fig. 13 a–c). Already there can be noticed a tendency to straighten out the leg and foot, and in view of the fact that the Barrington brooch was in all probability made in England, and the swiftness with which stylization of the zoomorphic design set in – even in Northern Europe the examples of this period which show well-designed animals are very few—there seem to be good grounds for dating these brooches at latest to the first half of the sixth century. The zoomorphic design which fills the inner border round the central boss accords fairly well with some such date, as, though the animals have undergone dismemberment to a certain degree, all the elements of which they are composed are present.

One important consideration must not be neglected in the study of the early zoomorphic ornament as represented on objects found in England. This is the scarcity of examples of Salin's Style II. It is impossible, of course, to draw a sharp line between this and the style of the preceding period. Salin has concluded that the inception of Style II in Northern Europe must be placed about the beginning of the seventh century, and consequently its introduction into England may be assigned to a date only slightly later. The greater proportion of objects thus ornamented have apparently been brought to light in Kentish soil, but Salin figures one notable example found in Cambridgeshire.[1] It is a large disc, richly gilded and decorated with bosses of shells with garnet centre. At the back a stout rivet is affixed to the centre, and at intervals round the circumference are small perforations. The example figured by Salin is now in the Cambridge Museum of Archaeology and Ethnology, and comes from Allington Hill, near Six Mile Bottom. An exact duplicate, undoubtedly a pair to it, is included in the Evans Collection, now in the Ashmolean Museum (fig. 14). This example is labelled Alton Hill, near Bottisham, without a doubt the same hill lying halfway between the two villages. Their purpose is somewhat difficult to determine, but it may be conjectured that they served as breast ornaments, being

Fig. 14. Gilt bronze disc. Alton Hill, near Bottisham, Cambs (Ashmolean Museum). ½.

[1] Salin, *op. cit.*, fig. 710.

both riveted and stitched to some stout material, perhaps a leather coat or tunic.[1] To judge from the extreme scarcity of Style II in this district, it may well be doubted whether these magnificent objects are of local fabric. There is much that is reminiscent of Kentish work, both in the disposition of the bosses and in the curious border placed round the rim and the centre boss. It is composed of narrow beads, with alternating ribbed and plain portions, producing a wonderful effect of light and shade, especially where plain and ribbed portions of the beading are placed in juxtaposition. This same style of border is very commonly employed on the circular Kentish brooches of base silver set with wedge-shaped, stepped, and oblong garnets, assigned by Mr. Smith to the latter half of the sixth century. The significance of such objects decorated according to Style II will be remarked on hereafter. Meanwhile it suffices to say that the scarcity of examples of this style tends to prove the persistence of Style I in England beyond the time at which it went out of fashion on the Continent. Before Style II could gain a firm foothold in this country Christianity had stepped in, and by putting an end to the custom of depositing relics with the dead, deprived us for ever of material for the study of the diffusion of the canons of Style II among Anglo-Saxon craftsmen.

A noteworthy feature of the Barrington brooch above mentioned is the central stud, formed of a small disc set on a tall waisted stem, and projecting high above the surface of the brooch. Studs of this type are of common occurrence in East Anglia and the Eastern Midlands, but I have only been able to discover one example from the West Saxon area, namely, on an imperfect applied brooch from East Shefford, Berks., now in the British Museum. To a saucer brooch, said to have come from Dover,[2] a somewhat more elaborate form of the same stud is also affixed.

Also from Barrington come another pair of applied brooches (again inadequately figured, in the same publication, pl. III, fig. 1), now in the Library at Trinity College, Cambridge (pl. XXVII, fig. 4).[3] They are decorated with a band of animal figures. These are somewhat extravagantly drawn, but again all the limbs are clearly recognizable. The most striking feature is the substitution of an arm with an unmistakable hand, though with only three fingers and a thumb, for the front leg in one of the animals.[4] On a pair of small saucer brooches from Edix Hill

[1] Is it possible that some such ornament is indicated by the expression *brēost-weorðung* in Beowulf, l. 2505? Compare the restoration of a Nydam warrior (Montelius, *Die Kultur Schwedens in vorchristlicher Zeit*, fig. 114).

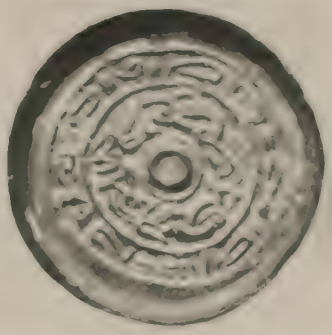
[2] In the British Museum.

[3] I have been given to understand that on the completion of the new Museum of Ethnology and Archaeology at Cambridge the collection in Trinity College Library may be transferred thither.

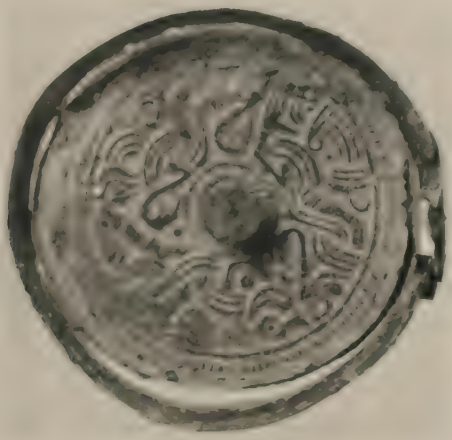
[4] A parallel use of a hand instead of a foot is to be seen on the brooch from Hedenmarkens Amt, Norway, mentioned above, but we may bring this pair rather into line with the first-mentioned pair from Barrington.

1. Hauxton, Cambs.

2. Barrington, Cambs.



3. Barrington, Cambs.



4. Barrington, Cambs.

5. Malton Farm, Cambs.

6. Duston, Northants.

7. Duston, Northants.

8. Stretton, Leics.

9. Hemington, Northants.

EASTERN AREA. ZOOMORPHIC DESIGNS ½

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Hole, Orwell,[1] two animals are executed in a manner only a little more rude. The brooches have never been cleaned, so that it is with great difficulty that the design can be deciphered. A more advanced example is the saucer brooch from Barrington[2] in Mr. Conybeare's collection (pl. XXVII, fig. 3), but it is interesting as the border is filled with a succession of legs, the chasing of which is sharp and clean, recalling the design round a saucer brooch from Fairford,[3] on which the central motive is a well-executed star. The same design also occurs on a square-headed brooch from the Isle of Wight;[4] the animal ornament on this example and the general execution places it beyond a doubt not later than A.D. 550, and probably early in the century. The same applies to the large ornate brooch from Barrington. All the component elements of the animals in the central panel of the head-plate and on two panels on the bow are clearly distinguishable. As on the Isle of Wight brooch, a band of tendril design borders the three outer sides of the head-plate.

The Malton Farm cemetery has produced one large applied brooch of interest; round a centre boss, the setting of which is lost, are three animals, exhibiting a fair standard of execution. The outer ring is occupied by a fifteen-point star or dog-tooth pattern, the spaces between the points of which are each filled with an animal's leg (pl. XXVII, fig. 5).

Lastly, mention must be made of a design of common occurrence. Eleven examples are known, namely, four from Barrington in the Cambridge Museum,[5] three from Malton, one each from Haslingfield and Hauxton (pl. XXVII, fig. 1) in the Evans Collection, and two from Linton at Audley End. The same design is represented by eight specimens at Kempston, Beds.[6] It consists of a central cross, each arm containing a rude face, the intervening spaces occupied by legs. An outer border is filled with a zoomorphic pattern, in which heads and legs seem to constitute the predominant elements. Mr. Smith pronounces this type to belong to the early part of the sixth century. There is not much in the decoration of the type in itself to support this hypothesis, and it may be admitted that it is but seldom that the saucer brooches have been discovered in association with other objects which are of much value towards determining their date. One instance of such association of the above-mentioned type, however, does occur in the cemetery at Linton, a cemetery which, to judge from the relics recovered, can hardly have been used much later than the middle of the sixth century. A richly furnished grave[7] produced two examples of applied brooches thus

[1] In Trinity College Library, Cambridge.
[2] *Camb. Ant. Soc. Comm.*, vol. v, pl. xi, fig. 1.
[3] *Fairford Graves*, 16, fig.
[4] *V. C. H. Hants.*, 388, coloured plate.
[5] *Camb. Ant. Soc. Comm.*, v, pl. viii.
[6] *Ibid.*, pl. iv, fig. 1.
[7] *Associated Architectural Societies' Reports*, vii. 269 ff., pl. iii, fig. 2.
[8] *Arch. Journ.*, xi. 96 (grave 9).

ornamented, together with a fine example of the large square-headed brooch. This is figured by Akerman,[1] but the decoration is far less debased than the illustration suggests. Its comparatively early date is assured by the well-marked survival of knobs round the head-plate. On typological grounds it thus falls into line with the date otherwise assigned to the type of applied brooches with which it was associated.

It may be noted that the Haslingfield relics comprise many products of a later period, especially several large cruciform brooches, but none of early types. This somewhat negative evidence for an early use of the cemetery so far as the

Fig. 15. Bronze brooch. Malton Farm, Cambs. (Ashmolean Museum). $\frac{1}{1}$.

Fig. 16. Bronze cruciform brooch. Malton Farm, Cambs. (Ashmolean Museum). $\frac{1}{1}$.

saucer brooches are concerned is, however, counterbalanced by the material from Malton Farm. It includes apparently no examples of large cruciform brooches, but there are two interesting brooches, one probably, the other undoubtedly, of an early date. The first is unique in form (fig. 15), consisting of two pendent heads such as are usually placed just below the bow of the large square-headed brooches. Between these heads is a wide triangular plate, divided down the median line by a tubular ridge, hollow at the back. Across the space between

[1] Akerman, *Pagan Saxondom*, pl. xxxvii.

the heads is a sunk panel chased with a cable design, distinctly a survival from Roman art such as is very rarely found in this part of England. The second brooch is of the cruciform type (fig. 101). It is in splendid preservation, though the two side-knobs are wanting. From the clean-cut facets and the general excellence of the workmanship, coupled with the presence of a screw-like end to the upper knob and of a long pin-catch, extending nearly the whole length of the foot, it must certainly be regarded as of other than English fabric, that is to say, as an importation, possibly from Denmark. A very similar brooch from Skogen, Larvik Amt, Norway, is figured by Schetelig in his *Cruciform Brooches of Norway*, and is dated by him about A.D. 500.[1] The Malton example appears to differ from it in just those details which, according to Schetelig, mark the variation between the Norwegian and Danish brooches, notably in the length of the upper part of the foot between the bow and the animal-head finial.

Apart from this example no cruciform brooches of any size come from this cemetery, certainly none which can be dated late in the century. There are on the other hand a large number of what may be termed the trefoil type, a smaller variety of the cruciform brooch, sometimes with a head of trefoil form, sometimes like a Maltese cross, the latter the earlier in point of development. These, as Salin[2] has shown, are rare in the Teutonic area, and are there confined with two exceptions[3] to the very districts, namely Schleswig-Holstein and the lower Elbe, from which tradition brought the first invaders of England. They are there associated with brooches which can be assigned to the fifth century, and numerous examples from East Anglia and the Eastern Midlands are, to judge from their form, but very little later in date. It is noteworthy that, apart from the saucer brooches, they are the type which occurs most commonly in the West Saxon area, but nevertheless no still earlier types are known from further east.

Passing westwards, there is one cemetery in the Eastern Midlands which has come to light since the publication of the *Victoria County History of Northamptonshire*,[4] and which has an important bearing on the question of the distribution of the saucer brooch. It is situated just outside Northampton at Duston, where many Roman remains have also been found. From it no less than twenty-one round brooches, one fragmentary, have been preserved—and of these fourteen are of the applied type. Other remains included a large square-headed brooch, an enamelled Roman brooch found in a Saxon grave, and a Celtic pin with a ring-head ornamented with projecting studs.[5] There is an entire absence of large cruciform brooches; even the small trefoil variety is but sparsely represented. No less than ten of the applied brooches and three saucer brooches are decorated with

[1] p. 26, fig. 31.
[2] *Op. cit.*, p. 74.
[3] A third example from Friesland is now in the Friesch Museum at Leeuwarden.
[4] *Proceedings*, 2 S., xix. 310.
[5] All now in Northampton Museum.

zoomorphic designs; of these one pair in particular is of interest as bearing on the present investigation (pl. XXVII, fig. 7). They are of the applied type; within a beaded border is a four-point star pattern, the whole centre of which is filled by a 'rosette' with a high stud of the East Anglian type in the middle. The points of the star are filled with well-executed grotesque faces much in advance of the stylized ϒ-shaped variety which occurs, for example, on brooches from Fairford. The quasi-diamond panels between the points in the outer ring each contain a crouching animal, somewhat cramped by reason of the shape of the space it was destined to fill, but otherwise clearly rendered. One feature worthy of note is the pear-shaped upper joint of the front leg. It is of a type only met with in Scandinavia in early sixth-century zoomorphic ornament.

In dealing with the Malton Farm cemetery a description has been given above of an applied brooch with a fifteen-point star, the spaces between them filled with animal legs, and an inner ring of zoomorphic design. The Duston cemetery has yielded a pair which are identical in size and ornamentation, except for a slight difference in the treatment of the central zoomorphic design. Like the Malton example, there has been a setting, probably of glass, in the centre rosette. The beaded edging of the star-points and the borders to the circles in the Duston brooches is a trifle more pronounced, but this is a feature which they have in common with others from the same cemetery. The saucer brooches from Duston appear to belong chiefly to a late period of the occupation of the site, though three with stars, carefully executed in the *Kerbschnitt* technique, may be earlier (pl. XXVIII, fig. 1). Two of them have the prominent knobs which characterize many of these brooches from this area. The rest are, however, of small size and show a debased and unintelligent treatment of the animal motive. Similar brooches are known from East Shefford, Berks.[1] (pl. XXVI, fig. 8). This style of decoration may be said to reach its climax on the two enormous saucer brooches from Wheatley, Oxon.[2] (pl. XXVIII, fig. 8). Any attempt to decipher the pattern is bound to result in failure. Only in certain combinations of strokes may be traced faint reminiscences of some of the most pronounced features of the zoomorphic ornament.

Yet another parallel to the Duston and Malton brooches mentioned above is forthcoming in an imperfect specimen from North Luffenham, Rutland.[3] Enough of the embossed disc is preserved to show that it agrees with the other two specimens in the general composition of the design, but again there is a certain measure of variation in the central zoomorphic design. No accurate record was kept of the objects associated in the various graves, but the cemetery has yielded

[1] In Reading Museum; another example in the possession of Mr. J. O'N. Barnes of Lambourn, who has kindly supplied a photograph of it.

[2] De Baye, *Industrial Arts of the Anglo-Saxons*, pl. viii, fig. 1.

[3] *Archaeologia*, lxii. 481 ff.

cruciform and other brooches which must belong to the beginning of the sixth century at latest.

It is hardly necessary here to dilate upon the close connexion which must have existed from a comparatively early period between the settlements in Rutland and its vicinity and those of East Anglia. The striking analogies which are presented by the relics from their respective cemeteries have been fully dealt with in the account recently published of the rich find of objects at Market Overton in the north of Rutland, and reference may be made to that account.[1] It is only necessary to draw attention to the presence in the above-mentioned cemetery of a saucer brooch, the decoration of which is identical with that on an example from Shefford, Bedfordshire (pl. XXVII, fig. 8). What I am more concerned to establish is the close relationship existing between the settlers in Bedfordshire, particularly at Kempston, and Cambridgeshire. As far as the saucer brooches are concerned, that relationship may be taken to be proved, but additional evidence is not wanting. From these two districts come examples of another class of brooches which do not occur elsewhere in England. These are the equal-armed brooches. Specimens are known from Haslingfield,[2] Little Wilbraham,[3] Newnham,[4] and Kempston.[5] The finest and to all appearances the earliest example comes from the first-named cemetery. It is of silver, while the other three are of bronze and of poorer workmanship, that from Newnham being unornamented except for a faint border of a punched design. These brooches have a peculiar interest in that close parallels to them occur in the province of Hanover, N. Germany.[6] Other types whose origin is to be sought in the same continental area have been found at Kempston, and in Cambridgeshire. Attention was drawn to the significance of these brooches in English cemeteries by Salin in 1894;[7] he pointed out that they belong to the earliest relics of Teutonic settlements in England, since they can on typological grounds be assigned with some degree of certainty to the first half of the fifth century, though their deposition in Anglo-Saxon graves must have taken place somewhat later. Yet another link is the occurrence at Kempston of a cinerary urn of the usual coarse type with a piece of green glass inserted in the base; just such another urn from the cemetery of Girton, Cambridgeshire, is now in the Cambridge Museum, and a third found near Stamford

[1] *Archaeologia*, lxii. 481 ff.

[2] Salin, *op. cit.*, fig. 609. Salin records it in his inventory of illustrations as coming from Haslingfield, Bedfordshire, and the mistake is repeated under the actual figure, where the provenance is given as Bedfordshire, England.

[3] Neville, *Saxon Obsequies*, pl. 2.

[4] Salin, *op. cit.*, fig. 176.

[5] *Assoc. Arch. Soc. Reports*, vii, pl. ii, fig. 9.

[6] Cp. Salin, *op. cit.*, figs. 176 and 177, and *Jahrbuch des Provincial-Museums zu Hannover*, April, 1907–8, pls. vi, vii, and viii

[7] *Manadsblad*, 1894, 29.

is now in the City and County Museum, Lincoln.[1] Continental parallels occur in cemeteries in the province of Hanover.

The answer to the whole question of the distribution of these circular brooches depends on the degree of acceptance which is to be accorded to the historical data of the Saxon Chronicle. Supposing that the date of the battle of Bedford in 571 is approximately, even if not substantially, accurate, there can hardly have existed any intercourse before that date sufficiently effective to support the theory that the early examples of these brooches from Cambridgeshire and the Eastern Midlands could have been imported thither. It is a trite fact and one that is well warranted by prehistoric research that trade is in no way dependent on conquest, and that economic relations continue to exist irrespective of and undisturbed by war, even between the races or tribes concerned. But this can hardly have been the case in the early days of the Anglo-Saxon conquest. For, *pace* Professor Oman's conjecture that 'Walas' (Britons) is a compiler's error for Angles,[2] the whole tenor of the tradition of the West Saxon advance is one of perpetual opposition to the newcomers by the Romano-British inhabitants. There appears to be no valid reason for supposing that the Britons had been entirely ousted from East Oxfordshire and Buckinghamshire. It has been noticed above how peculiarly close is the relation between the Anglo-Saxon settlements and the river systems. The district between the Thames and Bedford can have offered little inducement in this respect for an advance from the West Saxon side apart from the immediate necessity of subduing uncomfortable neighbours. Certainly none of the settlements in Buckinghamshire have the appearance of being early, to judge from the relics found in their cemeteries. Everything points to an effective barrier between Bedfordshire and the Thames Valley until late in the sixth century, and if this barrier to territorial acquisition consisted in the resistance of Romano-Britons, it must have been equally effective in preventing any trade intercourse between the Anglo-Saxons who occupied the districts to the north-east and south-west. When Professor Oman remarks on the improbability of the presence of the British within thirty-five to forty-five miles of London at so late a period,[3] he perhaps does not take sufficiently into account the thickly forested districts lying between. The scarcity of relics of the period from Hertfordshire certainly tends to prove that in this direction at any rate the barrier was an effectual one.

A further objection to the theory that these brooches, where met with in the Eastern area, are to be regarded as due to West Saxon influence, is met by a consideration of the numbers found in the two areas.

It is generally agreed that the adoption of Christianity was signalized by

[1] *Lincolnshire Notes and Queries*, vol. xi, 101 and plate.

[2] *England before the Norman Conquest*, p. 230.

[3] *Op. cit.*, p. 230.

a gradual cessation of the practice of depositing relics in the graves of the dead. In that case the whole period during which the burial of the pagan owners in the Eastern area, who had adopted the West Saxon form of brooch, can have taken place, amounts to some sixty years. By A.D. 635 the new religion had, according to Bede, obtained a fair measure of acceptance in the eastern counties. This period would appear at first sight ample for the purpose, but the numbers found to the east and north of Kempston amount to practically two-thirds of those from West Saxon sources. And in this latter category those from Buckinghamshire have been included, although it is in this county that I am inclined to place the debatable territory. However, the examples found there are not sufficiently numerous to affect the proportion materially.

The approximate date of the introduction of Christianity into Wessex is also A.D. 635, when Cynegils, the West Saxon king, was baptized at Dorchester, Oxon. That is to say, the West Saxon examples can be spread over a period of about a century and a half. Is it credible that a brooch-type should be more richly represented in the districts of its adoption than in the region in which it originated? Some of those ornamented with Teutonic zoomorphic designs are as early, if indeed not earlier than any known from Wessex. In short, it is inconceivable that they can all have been imported from the latter area or made under West Saxon influence subsequent to A.D. 571.

The only possible explanation appears to lie in the hypothesis that these types of brooches were in use in both areas contemporaneously. Not only so, but it is perhaps possible to assign with some degree of certainty the various cemeteries in which they are found to their respective areas. The line of demarcation which it seems should be drawn between them will be apparent from what has gone before. In spite of the Chronicle, there appear to be the strongest grounds for assigning Kempston to the eastern district, in which geographically it finds a more natural place. Not only has the cemetery produced relics of an early period of the invasions, but these relics find no parallels in the West Saxon area, while such have actually been found further east. It is true that examples of the applied brooches decorated with a cruciform pattern, the arms of which are filled with rude faces—a type represented by no less than eight specimens at Kempston—have also been found in Berkshire, but against this has to be placed the by no means inconsiderable number noticed from Cambridgeshire. Those from Berkshire were found at Frilford, a cemetery which has been used above to support a somewhat early date for some of the relics found there. But at the same time Rolleston concluded from a consideration of the various modes of burial observed that signs were not wanting of the influence of Christian teaching. Is it possible that these brooches came from the same source as the large

[1] Bede, *Eccles. History*, ii, cap. 15.

number of urns found both here and at Long Wittenham? Whatever may be the facts about the latter, the balance of the evidence seems to be in favour of the brooches having been imported into this Berkshire settlement from further north. Any idea that the Frilford brooches afford evidence of the source from which were derived all the specimens of this type found in the Eastern area can be shown to be absolutely untenable.

Those parts of England which were occupied by the invaders during the early period of Anglo-Saxon history can be mapped out in some measure into archaeological provinces according to the relics found in each. Whether they agree strictly with the tribal divisions recorded by Bede in every case is doubtful. Among the relics, however, which come from the districts traditionally occupied by the Angles is one class of objects, insignificant in themselves, but none the less distinctive. These are the clasps which are found by the wrists of skeletons, one pair by each arm (fig. 17). They are usually simple in form and decoration; ornate examples are more uncommon. They occur with great frequency in the cemeteries of East Anglia and the Eastern Midlands, and also of the more northerly counties as far as Yorkshire. But they have never been found in West Saxon graves. They can therefore be regarded as an article of dress or ornament peculiar to one element of the Teutonic invaders, or, at any rate, to an area in which history has placed that element. They are not found, of course, in every grave, but in several cases their association with saucer brooches is recorded. The instance of such association most pertinent to the present argument is perhaps the richly furnished grave at Linton, Cambridgeshire, noted above. The saucer brooch in this grave was of what may be termed, for the sake of simplicity, the Kempston type, and it was remarked above that the

Fig. 17. Bronze wrist-clasps (front and back views). *a* and *b*. Haslingfield, Cambs.; *c* and *d*. Mitchell's Hill, Icklingham, Suffolk. ½.

Linton cemetery had been abandoned before the end of the sixth century, that is to say before any cultural influences from the West could have been brought to bear on this part of England.

The association of similar types is also recorded at Barrington (grave 75). In this instance it is true that the ornamentation of the clasps consists of decadent animal forms of Salin's Style I,[1] but not only are these clasps recorded in association with other saucer and applied brooches from Cambridgeshire, but on one occasion at Barrington (grave 61) they accompanied the applied brooches (*supra*, p. 178), which by reason of the execution of the zoomorphic design could be assigned to a fairly early date in the sixth century. The same combination was observed at Duston; and at Holdenby, in a late burial, part of a clasp was found with two saucer brooches and a remarkable example of the large square-headed type. These clasps appear also to have been found at Kempston, though they are not actually stated to have been associated with brooches.[2]

Furthermore, the evidence so far as it goes is all on the side of these clasps being worn by women only. If, then, the saucer brooches are of West Saxon origin, it would presuppose an extension of West Saxon influence far beyond anything that the historical records warrant. It is hardly likely that the Anglian women would have adopted a West Saxon form without a corresponding adoption of Anglian types by their West Saxon sisters. The distinctive Anglian brooch, the large cruciform type, has never been found in Wessex; and even the large square-headed variety is quite uncommon, though this latter form does not appear to be restricted to any one tribe. In the years immediately following the battle of Bedcanford the West Saxons appear to have turned all their attention to the West, as shown by the battles of Dcorham six years later, after a further interval of seven years at Fethanleag. It is almost inconceivable therefore that their influence north and east of Bedford can have ever been so far-reaching as to cause an almost immediate adoption of the type of brooch most in vogue amongst them. No other explanation could account for so many early examples in the Eastern area. The absence of clasps[3] from the Kempston cemetery need not in itself cause surprise. A solution of the difficulty can possibly be found in the diffusion of various classes of objects in the cemeteries of the Eastern area. The cruciform brooch proper undoubtedly belongs to the tribes known as Angles, who appear to have received reinforce-

[1] *Camb. Ant. Soc. Comm.*, v, pl. iv, fig. 4. See also Salin, *op. cit.*, 326, and fig. 705.

[2] *Journ. Brit. Soc. Reports*, vii. 285, June 3rd. Mr. Reginald A. Smith has kindly searched for these at my request, but reports that they are not among the collection from that site in the British Museum. It seems, however, that not all the objects figured in the account above mentioned are in that collection, e.g. brooches figured pl. ii, fig. 1, and pl. vi, fig. 1. The matter therefore is still doubtful.

[3] In spite of note 2 above, I here assume, for the sake of argument, that none were found at Kempston.

ments from Norway during the sixth century.[1] These brooches, as has been shown, are scarce in the majority of cemeteries where the saucer type is at all widely represented. For example, none occurs at Kempston or Duston; at Linton there were one or two fairly early examples; at Malton Farm one was an early one and the rest certainly not late, nor are these numerous or of any size. It is only at Barrington that they are represented in any quantity, but in this case all the large examples are almost certainly later than A.D. 550. On the other hand, the sleeve-clasps which from their frequent occurrence in Anglian cemeteries[2] may be equally regarded as a speciality of the tribes comprised by that name, appear at an earlier date in conjunction with saucer brooches.

It may be conjectured therefore that the districts occupied in Bede's time by what he calls Middle Angles were in the first instance settled by a people having closer affinities in point of ornaments to the West Saxons. This people seem to have gradually moved westwards before the advancing Angles, who, though they occupied the neighbourhood of Cambridge and possibly absorbed the remnant of the previous settlers, did not penetrate immediately, if at all, to southern Northamptonshire and Bedfordshire. The corollary is that the Kempston cemetery may be taken to represent one of the first of these removals, and the absence of sleeve-clasps to show that this removal took place before any effective intercourse with the Angles had taken place. The Duston settlement belongs to a somewhat later date, while the Barrington graves show the successive occupations; the cemetery at Linton was only in use until at latest about A.D. 550.[3] Those at Wilbraham and Girton show the Anglian element in full possession. The partial adoption of Anglian ornaments, as evidenced by the sleeve-clasps, certainly presents some difficulties; all that can be said is that the fashion or tradition in the matter of brooches was too strong among the earlier settlers to admit of the introduction of the rival type.

A comparison of the relics found in Cambridgeshire and the Eastern Midlands with those of Wessex emphasizes one fact, namely, the number of objects in the former area to which an early date can be definitely assigned. Moreover, they bear a close resemblance to objects found in the native lands of the invaders. As the date of these latter can on typological grounds be placed in the first half of the fifth century, the evidence is strongly in favour of settlements having been established in these districts of England before the end of the century. On the other hand, the West Saxon territory is marked by an entire absence of brooches and the like which can with certainty be assigned to an earlier period than the

[1] Schetelig, *op. cit.*, 104 and 112.

[2] See *Saxon Obsequies, passim.*

[3] It is worthy of remark that not a single case of cremation was found in this cemetery. Saucer brooches when found with cremation burial appear always to be late in type, e.g. at Girton, Cambs., and Marton, Warwickshire.

beginning of the sixth century, a fact which harmonizes with the date of the landing of the West Saxons recorded in the Chronicle. The only exceptions are a few relics which can with some plausibility be regarded as Jutish, e. g. a small brooch found at Harnham Hill, and in this connexion it is noteworthy that they occur in cemeteries situated at no great distance from the coast, in short, close to the part of Hampshire which according to Bede was occupied by that tribe. Yet another contrast exists in the decorative motives employed in these two areas. In the Eastern area they are for the most part Teutonic in character, that is to say zoomorphic, while in the West the proportion of survivals from Roman designs is very large. So frequent are they that the invaders must have borrowed extensively from Roman sources to supplement their own system of ornament, and this artistic loan must have remained an integral part of that system for a considerable period. An interesting example of such survival of borrowed geometric designs is a saucer brooch (pl. XXV, fig. 8) decorated with the star motive found at Bidford on the Warwickshire Avon, a settlement which can hardly have been established until almost the close of the sixth century. There seems to be no doubt that in Western England there was a revival of designs which by this time had fallen into disuse in Northern Europe.

It is obvious even from the meagre information which we possess of this period of English history that the first wave of Anglo-Saxon invasion was not that which is actually recorded in the Chronicle. There were almost certainly two waves. The first partook more of the nature of raids than a campaign of occupation. During this early period bands of Teutonic pirates descended on our coasts and swept across the country in search of loot and plunder. In these raids naturally only the male portion of the tribes to which the invaders belonged took part. The second wave consisted in a wholesale migration of Teutonic tribes from North Germany and Denmark, bringing with them their families and possessions, and bent on permanent settlement.[1] The previous incursions into East Anglia rendered the task of occupation one of no great difficulty. Here the Romano-British element had been in a large measure obliterated. But it was otherwise in the West. The first inroads had driven the natives back in that direction, but during the interval they had recovered ground to some extent, so that when the Saxons sought to establish themselves in permanent occupation they found themselves confronted by continual opposition from the natives. This would amply account for the slow progress as recorded by the Chronicle, and would also explain the persistence in this region of motives belonging to the older classical art which had practically perished in the more easterly counties.

As the table of finds will show, geometric designs are not unknown, but are much scarcer in the Eastern area. They are usually employed on saucer

[1] It is satisfactory to find that this view has the authoritative support of Prof. Haverfield in his chapter on Roman Britain in the first volume of the recently published *Cambridge Mediaeval History*.

brooches of small size, and in most cases have all the appearance of late work. As examples of early work may be noticed a pair of brooches from Linton with an elaborate design somewhat resembling those from Chatham and Harnham Hill (p. 166), and on them, as on the Chatham brooch, a border of tendril design is substituted for the guilloche ornament. Perhaps the same may be said of three examples of the star-motive from Duston.

The probability of a late date for the saucer brooches with geometric design is strengthened by comparing those with zoomorphic patterns. In no case do we find animals portrayed in the intelligible form which we have seen on similar

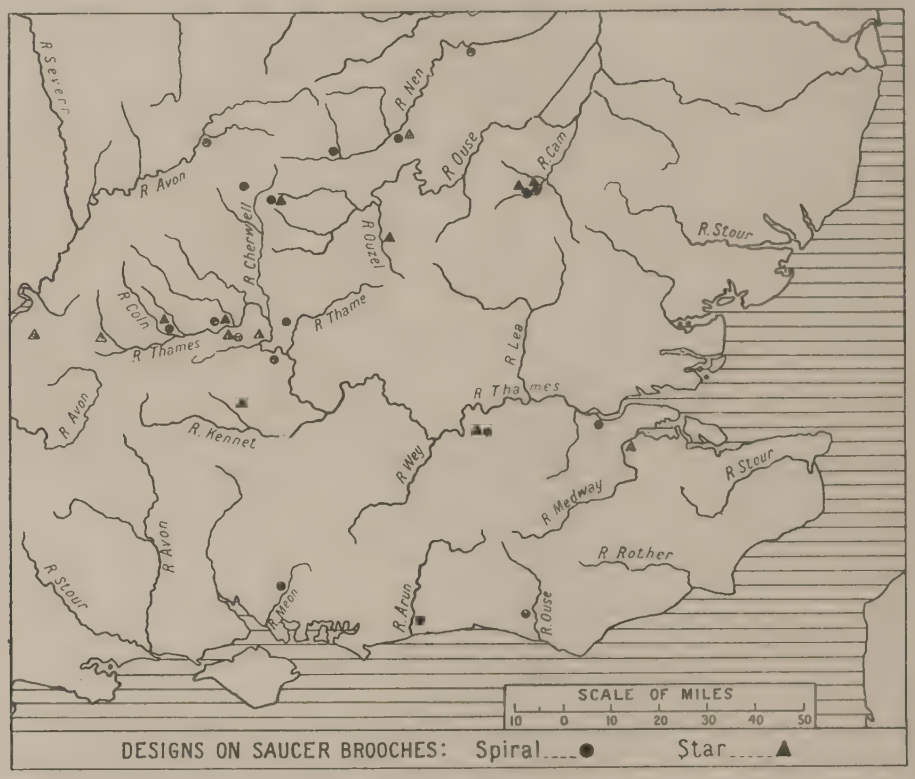


Fig. 18. Map of South-east England, showing distribution of spiral and star (with incurved sides).

brooches from Fairford and Long Wittenham. In the Eastern area the earliest of these designs on a saucer brooch exhibits an advanced stage of decadence; only on the applied type is there an intelligible rendering of these motives. The map (fig. 18) may help to give some idea of the wide diffusion of two of the commoner geometric designs, but to appreciate its full significance it is necessary to read it side by side with the lists at the end of the paper.

While treating of circular brooches ornamented with animal motives, it seems desirable to make more widely known a remarkable pair of brooches found by

Baron A. von Hügel in a grave in St. John's College Cricket Ground, Cambridge, and now in the Museum of Archaeology and Ethnology at Cambridge. The grave, that of a woman, contained two strings of beads, chiefly of amber, two small square bronze belt plates, a bronze buckle of a well-known Kentish type with a silver embossed plaque inserted in the triangular plate, and the two circular brooches. They are of the applied type or possibly imitations of the Kentish cloison type, but the rim is now lost, and it is hard to say if the embossed silver plate was originally in contact with the bronze back or separated by some substance. In the centre is a large hole which was probably occupied by a boss, such as are found in the Kentish brooches. Two central rings are filled with a species of rope pattern, but it is the outer ring which deserves special attention.

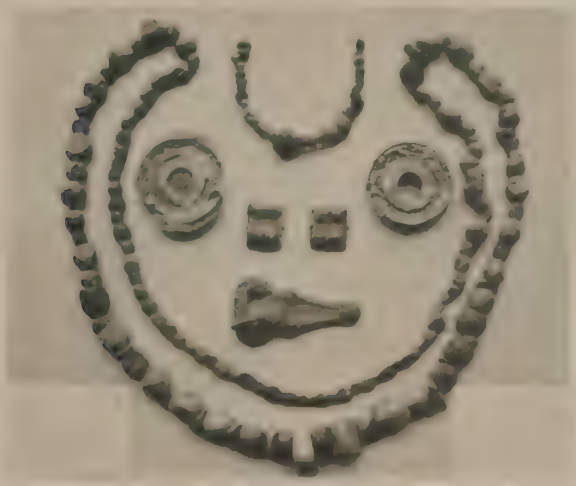


Fig. 19. Brooches, beads, &c. Cambridge.

Fig. 20. Brooch. Cambridge. $\frac{1}{1}$.

It is filled with five animals, depicted in a life-like manner such as is unknown in any other example of Anglo-Saxon zoomorphic ornament. With their threatening jaws and spare flanks, they must certainly have been intended to represent the lean grey wolf. They are certainly the most natural animals known from Early Anglo-Saxon art. Unfortunately they cannot be dated early, as the buckle with which they were associated is a late one, probably not earlier than the beginning of the seventh century. I am inclined to regard the brooches as an attempt to imitate the form of the Kentish cloison type with zoomorphic ornament substituted for the cloisons. But it is strange to find this remarkable example of naturalism at a period when the zoomorphic ornament had reached an advanced degree of stylization as a result of the subordination of the design itself to the object which it served to adorn.

Kentish Influence at the End of the Sixth Century.

It is curious to note the influence of Kentish types on the saucer brooches. One comparatively common type is decorated with three panels of debased zoomorphic design separated by three plain wedges, an undoubted imitation of the Kentish jewelled brooches ornamented with three or more wedge-shaped garnets (pl. XXVIII, fig. 4). Three examples are included in the Gibbs Collection in the British Museum, said to have come from King's Field, Faversham.[1] Well-authenticated specimens were found at Long Wittenham,[2] as also from Standlake and Wheatley, Oxon. (pl. XXVIII, figs. 7 and 8); on another pair from Barrington, Cambs.[3] (pl. XXVIII, fig. 6), a cruciform division is adopted which, though less accurately copied, is certainly based on the Kentish type with four garnets.[4] The date of these Kentish brooches has been fixed to the latter part of the sixth century, thus providing a *terminus post quem* for the Saxon imitations. The adoption of this method of decoration falls into line with the diffusion of a large number of relics of Kentish fabric, such as a variety of buckles, the jewelled brooches found at Milton North Field, near Abingdon, Berks., and the like, and it is not perhaps too bold to surmise that this diffusion was the result to some extent of the extension of Aethelbert's power at the close of the sixth century. It is not necessary, of course, to ascribe this diffusion entirely to this cause, especially as several of the examples cited come from territory which was not included in Aethelbert's hegemony, but so far as East Anglia is concerned the explanation given is at least tempting.[5]

The Origin of the Applied and Saucer Brooches.

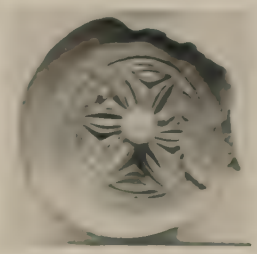
In conclusion, I may perhaps be permitted to offer some ideas as to the origin of these brooches, a point which, so far as I have been able to discover, has as yet not been elucidated. It must have struck any one interested in this period as strange that we should possess in England a fully developed brooch-form for which no continental prototype can be adduced, whereas the history of all the other forms known from Anglo-Saxon graves can be traced to continental sources. Salin places the 'button'-brooches at the head of the series, and notes a parallelism between them and certain Scandinavian studs. He continues[6]: 'Ausserhalb Englands habe ich ähnliche Fibeln eigentlich nur an der Westküste

[1] Roach-Smith, *Cat. of Anglo-Saxon Antiquities* (Gibbs Coll.), p. 6.

[2] *Archaeologia*, xxxviii, pl. xix, fig. 5. [3] *Camb. Ant. Soc. Comm.*, v, pl. xi, fig. 3.

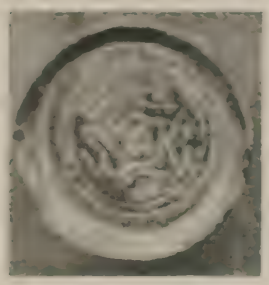
[4] A better example (see pl. xxviii, fig. 5) was found in a cremation urn at Marton, Warwickshire (*Proceedings*, v. 303).

[5] The above suggestion would also afford an explanation of the leg-design on brooches found in Kent and Cambridgeshire noticed above (p. 173). [6] Salin, *op. cit.*, 88.



1. Duston, Northants.
(Reduced size.)

2. Woodstone, Hunts. ½.



3. Malton Farm, Cambs. ½.

EASTERN AREA. GEOMETRIC DESIGNS

4. Ash, Kent.
(Circular jewelled brooch.)

5. Marton, Warwick (with cremation burial).
(Sketch after original.

6. Barrington, Cambs.

7. Standlake, Oxon.

8. Wheatley, Oxon.

INFLUENCE OF KENTISH JEWELLED BROOCHES ON 'SAUCER' TYPES I

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Frankreichs notirt, die gerade um diese Zeit sich englischem Einfluss sehr zugänglich zeigt.' That is to say, he appears to attribute the occurrence of this type on the Continent to a reflex influence from England.

Last summer during a tour of a number of museums in the districts from which tradition brought the Anglo-Saxons, what impressed me most forcibly was the manner in which the culture of that region, as evidenced by the relics preserved, seems to stop short at exactly the point at which it begins in our country. Thus, to take the province of Hanover, one of the latest brooch-forms is the equal-armed variety which, as we have seen, is one of the earliest types in this country.

Fig. 21. Buckles, attachment-plates, &c. Dorchester, Oxon. (Ashmolean Museum.)

Among the more prevalent forms is a disc-brooch. Owing to the fact that cremation was the practically universal method of disposing of the dead, only a few perfect examples are preserved.[1] They consist of two parts, a round disc of bronze to which is affixed another embossed disc, but there is no rim as in the English brooches. From its association with other types and from the form of the urns in which it has been found, it is evident that this brooch remained in use to the close of the fourth century and probably beyond. We have thus some reason to suppose that, so far as technique is in question, the applied brooch is earlier than the saucer.

[1] This is the type represented by a back-plate from the famous find at Dorchester, Oxon. The objects with which it was associated are identical with those belonging to the culture to which this brooch-type belongs in North Germany (fig. 21).

Another point in connexion with these disc-brooches is the constant presence of a hole in the centre, in which sometimes a tall iron rivet is preserved. What was the ornamental material which this rivet served to secure I have been unable to discover, nor is it of immediate interest. What I wish to suggest is that in the tall studs which occur often on saucer and applied brooches in the 'Eastern' area we have possibly a survival of this tall rivet. One of these disc-brooches from Altenwalde, near Cuxhaven, is furnished with a deep pin-catch like the pair from Frilford noted above.

Fig. 22. Objects from cremation burial at Alten Buls, Kr. Zeven, Hanover.

We are still, however, in ignorance as to the reason for the rim and its origin, and on that point I fear I can offer no suggestion. But I believe that the form came with the invaders and in that respect falls into line with all other relics of the Anglo-Saxon period. I have only a solitary piece of evidence for this statement, but yet its validity is, I think, beyond question.

In the Museum für Völkerkunde at Hamburg is an associated find from Alten Buls, near Soltram in the district of Zeven, which lies west of Hamburg.[1] The objects constituting this find are:

[1] *Jahrbuch der wissenschaftlichen Anstalten zu Hamburg*, iv (1887). E. Rautenberg, Römische und germanische Altertümer.

Tweezers, earpick, a cylindrical piece of bone ornamented at the end with an arrangement of five dots conceivably intended for stamping pottery, a bronze buckle with lozenge-shaped plate and the ring terminating in animal heads, and lastly a pair of saucer brooches, 23 mm. in diameter, decorated with a square, the sides being prolonged into spirals. A dotted circle occupies the centre of the square.

The buckle with its animal-ornament alone proves the find to belong to a period contemporary with the beginning of the main settlements in England. In this respect the find is closely analogous to that from Mitcham, to which, as has been remarked above, Mr. Smith has assigned an early date owing to the presence of a buckle with similar ornamentation.

It seems then that the evolution of the saucer brooch was in process of becoming a realized fact at exactly the point at which the migrations to England were beginning. The only explanation of its scarcity in North Germany I can offer lies in the curious break in the culture of those districts which I have remarked on above. Is it possible that Bede's statement that after the emigration of the Angles from Anglia that district 'remains a desert unto this day' is also applicable to North Germany west of the Elbe, and that the Saxon population migrated *en bloc*? If so, we may conceive that the saucer brooch was at that period coming into fashion, and that, as the women folk of the invaders would naturally bring their jewellery with them, the early examples have found a resting-place in Anglo-Saxon graves in this country. Only thus can we obtain that period of overlap between the two cultures which must necessarily have existed, and which in the case of the cruciform brooches is more easily supplied.

Another continental example comes from Harmignies, in the province of Hainaut, Belgium, for the knowledge of which I am indebted to Professor Baldwin Brown, who has very kindly transferred to me the permission accorded to him by Baron A. de Loë, of the Musées Royaux du Cinquantenaire, Brussels, to publish it in England. It is decorated with the common design of running spirals executed in rather a poor style as contrasted with the Alten Buls brooches, and may therefore be an exportation from this country at some time in the sixth century.

The conclusions may be summarized:

(i) The saucer-brooch can no longer, as in the last century, be regarded as peculiar to the West Saxons.

(ii) Its diffusion outside the West Saxon area is so widespread that some other explanation is demanded than that of commercial or other relations with the West Saxons.

(iii) The chief district where these brooches occur, outside of Wessex, lies in the Eastern Midlands and Cambridgeshire, and an examination of the patterns used in their decoration shows that they were in use to the north and east of

Bedford considerably prior to A. D. 571, the earliest approximate date at which, according to the historical records, relations between that district and Wessex could have become possible.

(iv) Further investigation demonstrates that of the two known varieties of these brooches, the true saucer type is more richly represented as compared with the applied type in the Western area, while the reverse is the case in the Eastern area.

(v) In the Western area geometric designs predominate; in the Eastern zoomorphic. The strong survival of Roman influences in the former area thus serves to confirm the deductions of history, namely, that the invaders held the East of England from the outset, whereas in the West fresh resistance sprang up to meet the second Teutonic incursion aiming at permanent settlement.

(vi) On various grounds, it seems probable that the people who used these brooches in the Eastern area must have been more closely allied in point of culture to the West Saxons than to their East Anglian neighbours.

(vii) Towards the close of the sixth century, influences from Kent are observable in the decoration of the saucer brooches, thus corroborating the historical evidence of the extension of Kentish power under Aethelbert.

(viii) Certain proof of the source from which the saucer brooch sprang is still to seek, but there are strong indications that it may have come from North Germany, west of the Elbe, and that it first came into fashion at the actual period during which the main migrations to England took place.

It would be impossible for me to mention individually all those who have been kind enough to assist me in my researches in connexion with this paper. They are more than numerous, and I can only express here my deep gratitude for the courteous response to inquiries which I have met with in every case. Often the replies have been enhanced by the supply of photographs or drawings which have greatly facilitated my work. Without this cordial assistance the completion of my task would have been wellnigh impossible. I desire, however, to place on record the special debt of gratitude which I owe to the authorities in charge of the Saxon department of the British Museum, Baron A. von Hügel of Cambridge, and Mr. T. J. George of Northampton, for repeated kindness in granting me access to collections under their care; and also to Lord Braybrooke, the Rev. E. Conybeare, and Mr. A. F. Griffith, for permitting me to examine their private collections. I am also indebted to Dr. Byhan of the Museum für Völkerkunde at Hamburg for supplying me with an excellent photograph of the two examples in that museum.

I. WESTERN AREA

								Museum	Where recorded, &c.
				Saucer	Applied				
Berkshire									
Near Abingdon	2	..	2	..	..	..	..	Ashmolean	
Frilford	4	..	4	..	4	4	2	Ashmolean and British	*Proceedings*, 2 S., iii. 136.
Reading	..	2	2	..	2	2	.	Reading	*Journal British Archaeological Association*, l. 150 ff.
Remenham (Aston)	..	..	..	1	..	1	..	British	De Baye, *Industrial Arts of the Anglo-Saxons*, pl. viii, fig. 5.
East Shefford	7	..	7	4	..	4	2	British, Reading, and Collection of Mr. J. O'N. Barnes	*Proceedings*, xiii. 108 and xxi. 8, fig. 9; *Newbury District Field Club Trans.*, iv. 196.
Long Wittenham	9	3	12	8	..	8	8	British	*Archaeologia*, xxxviii and xxxix.
Buckinghamshire									
Ashendon	2	..	2		..		..	Audley End	Akerman, *Pagan Saxondom*, pl. xxxviii; *Journal British Archaeological Association*, v. 113.
Bishopstone	2	..	2	1	1	2	.	Aylesbury	*Records of Bucks.*, v. 24.
Kingsey	..	..	..	1	..	1	.	,,	
Mentmore	1	..	1	..	..	..	..	British	*Archaeologia*, xxxv. 381; *Proceedings*, 1 S., iii. 73.
Stone	1	..	1	..	..	..	..	,,	*Archaeologia*, xxx. 545.
Gloucestershire									
Chavenage	1	..	1	..	..	..	..	Ashmolean	*Journal British Archaeological Association*, iv. 53.
[illegible]	8	7	15	11	2	13	3	Ashmolean, British, and Liverpool	Wylie, *Fairford Graves*; Akerman, *Pagan Saxondom*, pl. xix, *Proceedings*, 1 S., iv. 38, and *Archaeologia*, xxxvii. 146.
Oddington									
[illegible]	[illegible]	..	[illegible]	1	..	1	..	[illegible]	*Gentleman's Magazine*, April, 1787.
				..	..	..		[illegible]	*Proceedings*, 1 S., ii. 60.
Hampshire									
Droxford									
Winchester (?)	1	..	1	..	..	..		British	*Proceedings*, xix. 128.
Chessell Down	..	..	..	2	..	2	..	,,	
(Isle of Wight)	1	1?	2	..	..		..	British and Carisbrooke	Hillier, *History and Antiquities of the Isle of Wight*, Part I, fig. 22; *Trans. British Archaeological Association* (Winchester vol.), 1845, p. 153 (ornament now lost, rendering verification of type impossible).
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		

WESTERN AREA (*continued*)

	Geometric		Total Geometric	Zoomorphic		Total Zoomorphic	Applied brooches with embossed disc missing	Museum	Where recorded, &c.
	Saucer	Applied		Saucer	Applied				
Brought forward	41	13	54	29	9	38	15		
KENT									
Canterbury	1	..	1	..	..	..	..	Canterbury	Brent Collection, 2166.
Chatham	1	..	1	1	..	1	..	Ashmolean	Douglas Collection.
Dover (?)	1	..	1	..	..	..	..	British	*V. C. H. Kent*, i. 378.
Faversham	..	..	..	3	..	3	..	„	Roach Smith, *Catal. of Anglo-Saxon Antiquities* (Gibbs Collection), p. 6.
Higham, near Rochester	1	..	1	..	..		..	Rochester	*Archaeologia Cantiana*, xxviii, xci.
Horton Kirby	1	..	1	2	..	2	..	Maidstone	*Gentleman's Magazine*, 1867, ii. 82; *Arch. Journ.*, xxv. 94.
Northfleet	1	..	1	2?	..	2	..	Maidstone and Gravesend Public Library	Found in 1899.
OXFORDSHIRE									
Oxfordshire	4	..	4	..	..	..	..	British	Londesborough Collection of Rings and Ornaments, nos. 62, 72, 74, and 163; *Archaeological Journal*, lxv. 82, fig. 17.
Brighthampton	7	..	7	3	2	5	3	Ashmolean	*Archaeologia*, xxxviii; *Proceedings*, 2 S., ii. 443.
Broughton Poggs	2	2	4	..	..	..	2	Ashmolean and Liverpool	*Proceedings*, 1 S., iv. 73; *Archaeologia*, xxxvii. 144.
Dorchester	2	..	2	..	..	..	..	Reading	*Archaeologia*, xxviii. 328 and 334.
Filkins	3	..	3	3	..	3	2	Ashmolean and Liverpool	*Archaeologia*, xxxvii. 141 ff. (except two in Ashmolean Museum).
Hornton	2	..	2	..	..	..	..	British	
Standlake	1	..	1	..	1?	1?	..	Collection of Mr. P. Manning, F.S.A., and unknown	For the doubtful applied brooch, see *Proceedings*, 1 S., iv. 213.
Wheatley	2	..	2	2	1	3	3	Ashmolean	De Baye, *Industrial Arts of the Anglo-Saxons*, pl. viii, fig. 1 (1); *Proc. Birmingham Philosoph. Soc.*, iv, Part I, 189.
SURREY									
Croydon	..	1	1	..	..	..	1	British and Croydon	*Proceedings*, xv. 332.
Mitcham	4	..	4	..	..	..	2	Collection of Mr. H. F. Bidder, F.S.A., or Guildford	*Surrey Archaeological Collections*, xxi. 1 ff.
Carried forward	74	16	90	45	13	58	28		

WESTERN AREA (*continued*)

	Geometric			Zoomorphic					
	Saucer	Applied	Total Geometric	Saucer	Applied	Total Zoomorphic	Applied brooches with embossed disc missing	Museum	Where recorded, &c.
Brought forward	74	16	90	45	13	58	28		
SUSSEX									
High Down	9	1	10	..	..	..	3	Collection of Mr. E. Henty, F.S.A.	*Archaeologia*, liv. 369; lv. 203.
Saxonbury	3	..	3	2	..	2	..	Lewes	*Sussex Archaeological Collections*, xxxviii. 177.
WARWICKSHIRE									
Aston Cantlow	1	..	1	2	..	2	..		*Proceedings*, 2 S., iii. 424.
Bidford	2	..	2	..	..	..	..	Worcester	*V. C. H. Worcester*, i. 231.
Longbridge	4	..	4	2	..	2	..	British (5)	*Proceedings*, vii. 78; *Archaeological Journal*, xxxiii. 380.
Marton	..	..	..	1	..	1	..	Rugby School	*Proceedings*, v. 303; *Arch. Journ.*, xxxiii, 375; *Associated Architectural Societies' Reports*, p. 231.
Offchurch	..	..	..	..	..	..	1?		
WILTSHIRE									
Basset Down	4	..	4	..	..	..	..	Devizes	*Wilts. Arch. and Nat. Hist. Mag.*, xxviii. 104 ff., figs. 19 and 20.
Harnham Hill (Salisbury)	2	2	4	2	..	2	..	British	*Archaeologia*, xxxv. 259 and 475.
Kemble	3	..	3	..	..	..	2	Liverpool	*Archaeologia*, xxxvii. 114.
Mildenhall	2	..	2	..	..	..	..	Devizes	*Wilts. Arch. and Nat. Hist. Mag.*, vi. 259.
WORCESTERSHIRE									
Upton Snodsbury	2	..	2	..	..	..	..	Worcester	*V.C.H. Worcester*, i. 228, coloured plate, fig. 9; *Proceedings*, 2 S., iii. 342.
Worcester Museum (? Bidford)	1	..	1	..	..	..	2	Worcester	
Total	107	19	126	54	13	67	36		

Western Area { Total Saucer 161
„ Applied 68
229

NOTE.—This total is exclusive of the button brooches which are common in Kent and occur frequently in the West Saxon district.

II. EASTERN AREA

	Geometric		Total Geometric	Zoomorphic		Total Zoomorphic	Applied brooches with embossed disc missing	Museum	Where recorded, &c.
	Saucer	Applied		Saucer	Applied				
BEDFORDSHIRE									
Kempston	7	..	7	6	12	18	9	British and Ashmolean	*Associated Architectural Societies' Reports*, vii. 269 ff.
Leighton Buzzard	1	..	1	..	..	..	..	British	*Proceedings*, ix. 29.
Shefford	..	..	..	2	..	2	..	Cambridge (1)	*Archaeological Journal*, vii. 71 and fig. opp. p. 79; *Publ. of Camb. Ant. Soc.*, 4to, i, Roman and Romano-British Remains at and near Shefford, co. Beds., p. 12; ? 2nd example in Pitt-Rivers Museum, Oxford.
CAMBRIDGESHIRE									
Cambridge	..	..	..	..	4	4	..	Cambridge	*Cambridge Antiquarian Society Comm.*, v. 5 ff., and plates iii, iv, and v.
Barrington	3	1	4	3	12	15	10	Cambridge and Ashmolean	
Girton	..	..	..	1	..	1	2	Girton College Library	
Haslingfield	4	..	4	..	1	1	..	Cambridge and Ashmolean	
Hauxton	..	..	..	..	1	1	..	Ashmolean	
Linton Heath	2	..	2	..	2	2	2	Audley End	*Arch. Journ.*, xi. 51 and 94.
Malton Farm	2	..	2	..	4	4	3	Ashmolean	
Orwell (Edix Hill Hole)	3	..	3	..	..	..	2	Trinity College Library, Cambridge, and ?	*Collectanea Antiqua*, vi. 158.
Little Wilbraham	..	..	..	..	2	2	2	Audley End	Neville, *Saxon Obsequies*, pls. 2 and 3, and pp. 20 and 23.
HUNTINGDONSHIRE									
Woodstone	1	..	1	1	..	1	..	Peterborough	*Journal British Archaeological Association*, n.s., 1899, v. 347.
LEICESTERSHIRE									
Rothley Temple	..	..	..	..	..	..	1		Nichols, *History of Leicester*, iii, pl. 129.
LINCOLNSHIRE									
Sleaford	1	..	1	..	..	..	..	British	*Archaeologia*, l. 388.
NORTHAMPTONSHIRE									
Northampton (St. Andrew's Hospital)	..	..	..	1	..	1	..	Northampton	*Archaeologia*, xlviii. 337.
Brixworth	..	..	..	..	..	..	2	,,	T. J. George, *Archaeological Survey of Northants*, 1904.
Duston	4	..	4	3	9	12	3	,,	*Proceedings*, xix. 312.
Holdenby	..	..	..	2	2	4	1	,,	*Northants Nat. Hist. Soc. Journ.*, xi and xv. 96.
Irchester	2	..	2	..	..	..	..	,,	
Kettering	..	..	..	1?	..	1?	..	,,	? *Proceedings*, xix. 307.
Marston	3	..	3	..	..	..	..	,,	*Archaeologia*, xlviii. 329 and pl. xxiii. 13.
Newnham	2	..	2	..	..	..	2	,,	*Archaeologia*, xlviii. 336.
Carried forward	35	1	36	20	49	69	39		

EASTERN AREA (*continued*)

	Geometric		Total Geometric	Zoomorphic		Total Zoomorphic	Applied brooches with embossed ... missing	Museum	Where recorded, &c.
	Saucer	Applied		Saucer	Applied				
Brought forward	35	1	36	20	49	69	39		
RUTLAND									
Market Overton			..	3	2	5	..	Collection of Major Wingfield, D.S.O.	*Proceedings*, xxii. 51 and pl. opp. 52; *Archaeologia*, lxii. 487.
North Luffenham		..	.		2	2	3	Collections of the Earl of Ancaster and Mrs. Morris	*Associated Architectural Societies' Reports*, xxvii. 225.
SUFFOLK									
Mitchell's Hill, Icklingham	..	..	..	..	1	1	1	Ashmolean	*Bury and co. Suffolk Proc.*, vi. 71; *V. C. H. Suffolk*, i. 343.
YORKSHIRE									
Driffield	..	..		..	..	..	1	York	(Grave No. 4, 1849), Akerman, *Pagan Saxondom*, pl. viii, fig. 2; Mortimer, *Forty Years' Researches*, 288, pl. cvi, fig. 842.
Total	35	1	36	23	54	77	44		

Eastern Area { Total Saucer 58
„ Applied 99

157

III. ENGLAND (EXACT PROVENANCE UNKNOWN)

ENGLAND	..	..	..	1	..	..	..	British	*Archaeological Journal*, lxv. 83, fig. 19; cp. Shefford, Beds., without punched border.
(?)	1	..	..	..	..	..	..	„	*Misc. Graph.*, pl. xxiii, fig. 1, Spirals.
(?)	1	..	..	..	..	..	..	Cast in Ashmolean	Spirals.
(?)	..	..	..	1	..	..	..	„ „	Debased zoomorphic design between undecorated wedges; cp. Faversham (Gibbs Collection).
Total	2	..	.	2	.				

Total Saucer brooches = 4.

IV. EUROPE (Continent)

	Geometric		Total Geometric	Zoomorphic		Total Zoomorphic	Applied brooches with embossed disc missing	Museum	Where recorded, &c.
	Saucer	Applied		Saucer	Applied				
Alten Buls, near Soltram, Amt Zeven, Hanover	2	..	2	..	..	..	..	Museum für Völkerkunde, Hamburg	Square with branching spirals at the corners.
Harmignies, Hainaut, Belgium	1	..	1	..	..	..	..	Musées Royaux du Cinquantenaire, Brussels	Spirals.
Waben, near Montreuil, France	..	..	..	..	1?	1	..	Ashmolean (Evans Collection)	Silver-embossed disc only, with egg-and-tongue border surrounding four full-faced animal heads alternating with four rosettes.
Herpes, Charente	..	..	..	..	..	..	1	British	
Sigy, Neufchâtel, Seine-Inférieure	..	..	..	..	1	1	..		*Proceedings*, 1 S., iv. 237.
Italy	..	..	..	..	1	1	..	British	Eagle and hare, &c., *Archaeological Journal*, lxv. 80.
Total	3	..	3	..	3	3	1		

Total 7 = 3 Saucer brooches.
4 Applied ,,

1

2

1. General view of La Motte (from south). 2. Skull from grave no. 4.

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IX.—*Further Observations on Prehistoric Man in Jersey.* *By* R. R. Marett, *Esq., M.A., Reader in Social Anthropology, Oxford.*

Read 27th June, 1912.

This paper is intended to supplement, and in the light of fuller information to modify, the communication regarding recent archaeological discoveries in Jersey that I had the honour to lay before the Society of Antiquaries last year. The new matter relates to two sets of excavations undertaken by the Société Jersiaise, in both of which I was privileged to take part. Neither site was altogether virgin. But, whereas the cave known as La Cotte de St. Brelade could be counted on as rich in objects of antiquarian interest, Green Island, or, to call it by its more ancient and authentic name, La Motte, had yielded little, at all events of late. Fifty years ago a human cranium of ancient appearance had been found low down in its basement of loess or brick-earth; but since that time nothing more had come to light here, except a rough neolithic implement or two from the higher levels of the islet. Even now, perhaps, it can scarcely vie with the St. Brelade's cave as an attraction to the student of prehistorics; for I am afraid that he is apt to rate the neolithic in general all too cheaply, owing to the glamour that enshrouds the more remote, if hardly more inscrutable, palaeolithic. Yet, as the sequel will show, La Motte has at any rate given birth to a crop of problems, which, I venture to think, may prove of more than local importance.

A. La Cotte de St. Brelade.

When operations in this cave were suspended in the summer of 1910, it was believed that elaborate precautions must be taken, in the way of shoring up the precipitous bank formed by the residual rock-rubbish, before it would be possible to uncover a greater extent of the palaeolithic floor with reasonable safety to life and limb. Moreover, as if to confirm our worst fears, several heavy falls of debris occurred during the winter, the litter wellnigh obliterating our former workings. At length, however, the experienced quarrymen, who had been in the employ of the Société Jersiaise from the outset, devised sundry methods whereby the two horns of our dilemma, great risk and great cost, might alike be avoided, at any rate if the additional clearance were confined to a modest

space. So from the 14th to the 21st of August, 1911, the attack was renewed, the first three days being spent on the demolition of the upper and sterile portions of the cave-filling, while the rest of the time was occupied with a minute search at or below the level of ancient occupation.[1]

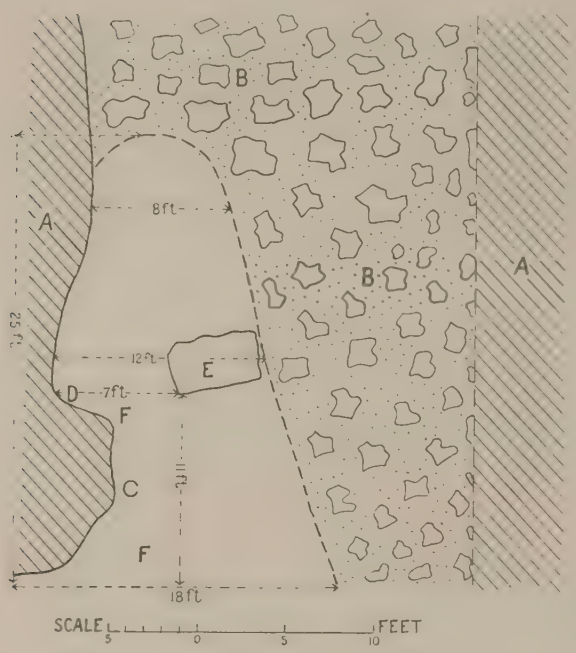


Fig. 1. Horizontal section of La Cotte de St. Brelade, showing limits of excavation, 1911. (Adapted from diagram by Mr. J. Sinel.)

A A. Granite rock.
B. Rubble as yet unexplored.
C. Main hearth.
D. Where bones and teeth were most plentiful. Human teeth at this spot.
E. Large block fallen on hearth (now removed).
F. Flint implements abundant.

(N.B. Beyond the limits of excavation here shown the position of the side-walls of the cave remains wholly undetermined.)

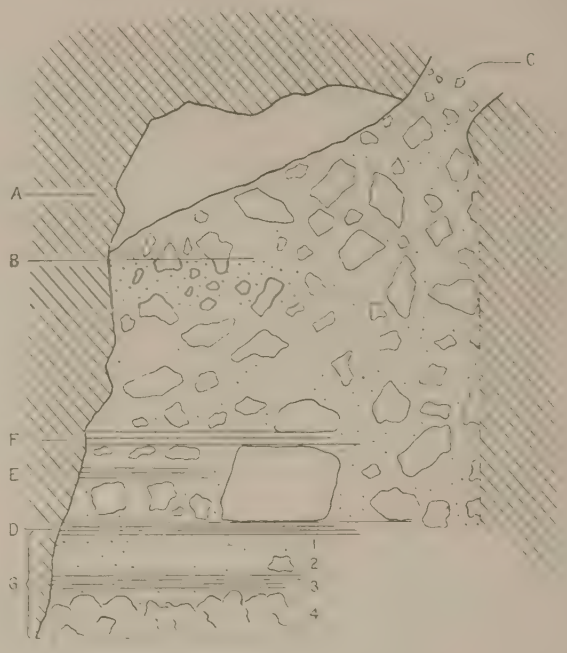


Fig. 2. Vertical section of same, showing levels of floor and sterile layers above and below. (Adapted from diagram by Mr. J. Sinel.)

A. Granite rock.
B. Rubble of yellow clay and stone fragments.
C. Assumed chimney communicating with higher level.
D. Main hearth.
E. Continuation of hearth over fallen rubble.
F. Continuation of hearth over another fall of rubble.
G. Portion excavated beneath main floor level. (1) Thin layer of yellow clay, and a few stone fragments. (2) Finely disintegrated granite, 1 to 2 ft. thick. (3) Black layer, 1 to 1½ ft. thick (animal and vegetable remains). (4) Whitish unctuous clay and stone fragments.

The excavation of the previous year had opened out some 11 ft. square of floor. This consisted in a fairly level bed of ashes, the source of which

[1] See the Report, signed by Messrs. E. T. Nicolle and J. Sinel, and dated September 20, 1911, printed in *37e Bulletin de la Société jersiaise*, 213 f. I need hardly say that it has been of the greatest use to me in drawing up the present statement; for which, however, the sole responsibility is mine.

revealed itself in a hearth piled up against the westward wall of the cavern some 8 ft. from its mouth. We now sought to push our exploration further along this same wall, and eventually succeeded in penetrating as far back as 25 ft., measured at floor-level. The wall up to this point preserves the same general direction, though near the hearth it juts forward a little, and afterwards retreats so as to form a shallow recess. Beyond this point, however, it appears to bend sharply inwards, as if the utmost bounds of the cave had been reached on this side.

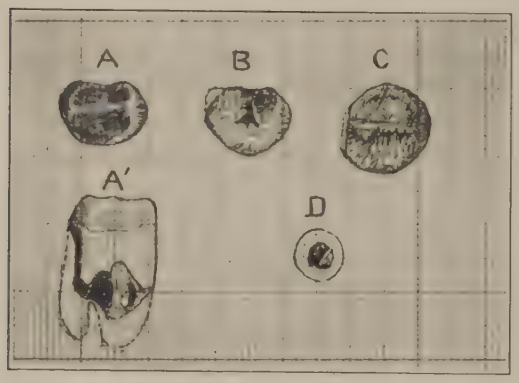
The main obstacle to our advance was a block of the local granite, weighing perhaps 15 tons, which lay 11 ft. from the entrance and 7 ft. from the side-wall. When its flat top, which stood 5 or 6 ft. above floor-level, was disencumbered of rubble, it was found to be strewn thickly with ashes, flint chippings and bone-refuse. On the other hand, upon the removal of the great stone—a ticklish business, finally accomplished by splitting it with wedges—a similar bedding of ashes was seen to run right under it. It follows that this piece of the roof must have come down during the period of human occupation.[1] In other words, the process of dilapidation, which in the end buried the relics of Mousterian man under 20 ft. or so of detritus, was already active in his day. Such indeed might well be the case at any time during the long and tumultuous course of the Ice Age; even if an especially cataclysmal close to the pleistocene period be postulated, as, for instance, by Prestwich with his very drastic hypothesis of a deep submergence of Western Europe,[2] or by M. Rutot with his vaguer reference to *l'époque du grand détritique*.[3] This theory of a gradual and age-long filling up of the cave—such as might be expected if, as I suggested in my other paper, there exists somewhere at the back a chimney, at present blocked, which formerly acted as a swallow-hole for *névé* and flood-water—was confirmed by the discovery, of which more anon, that the palaeolithic floor throughout rested on a substratum of loose material, which we excavated to a depth of 5 ft. without finding bottom anywhere. It is also to be noted that, beyond the hearth, the level of the floor, even close to the side-wall, began to rise steadily to a height of 3 or 4 ft. It is plain, then, that a pre-existing accumulation of débris must in Mousterian times have somewhat curtailed the limits of this otherwise roomy abode; though precisely to what extent can be determined only by a complete excavation.

[1] No typological difference was to be discerned between the implements occurring severally above and below the block in question. It may be worth noting, however, that an implement figured in my former paper (*Archaeologia*, lxii. 461, pl. lxvii. 1, 3rd row, no. 11, which does seem to be of a rather peculiar type, came from a spot level with the top of this stone, and but a few feet away from it.

[2] See (Sir) J. Prestwich, *Phil. Trans. Royal Soc.*, vol. 184 (1893), A. 903.

[3] See A. Rutot, *Bull. Soc. belge de Géol.*, xxiv (1910), 70.

Now our clearing carried us but a short distance inwards from the western wall, showing 18 ft. of breadth at the opening and 12 ft. or less from the half-way point on. Consequently we never got on the track of any new circle of occupation, if any such await discovery in another part of the cave; but remained throughout within the area dominated by the hearth against the wall. Much of the bone refuse associated with this hearth was found to have collected in the shallow recess behind the jutting piece of rock against which the fire had been built. Here we added much to the bulk of our collection of animal remains, if little to the catalogue of species. Dr. C. W. Andrews, of the British Museum, who is responsible for the determinations, reports on the fresh finds to the following effect:



A. Crown of upper third molar (right).

A'. Proximal aspect of upper third molar (right).

B. Crown of upper third molar (left).

C. Crown of lower third molar (right).

D. Section of root of left upper incisor (natural size).

Fig. 3. Additional teeth of *Homo Breladensis* found in 1911.

(1) The Woolly Rhinoceros (*Rhinoceros tichorhinus*) is represented by a well-preserved left upper molar, first or second, and probably also by a fragment of bone;

(2) The Reindeer (*Rangifer tarandus*) by right and left fourth lower premolars, part of upper premolar, lower end of metacarpus, fragments of feet, and probably by a fragment of antler;

(3) A large variety of Horse by various teeth, upper and lower molars, incisors and canine;

(4) *Bos* (probably *Bos primigenius*) by teeth, axial vertebra, parts of the distal end of metapodial, and probably by a fragment of humerus; whilst there are also fragments of the left femur and ulna of a large ox of uncertain species;

(5) A large Stag (? *Cervus elaphus*) by portions of skull with the base of an antler, and probably by a scapula;

(6) Sheep or Goat by fragments of mandible.

A comparison with the list given in my other paper will show that only the last-mentioned species, sheep or goat, did not occur before. On the other hand, it is eminently satisfactory to have obtained such an absolute confirmation

of the former results, which were based on the study of fragments both meagre in amount and in very bad condition.

A careful examination of the crevicesin the rock a little behind the hearth, and at about 3 ft. above the lowest level of the floor, brought to light four more human teeth; which, in the opinion of Dr. Keith, were once the property of the individual who owned the nine previously found near this spot. The same authority has kindly supplied me with the subjoined drawings and table of measurements:

MEASUREMENTS IN MILLIMETRES.

	Crown.			Neck.		Total length.	
	Proximo-distal.	Labio-lingual.	Maximum height.	Proximo-distal.	Labio-lingual.	Actual.	Original.
1. Molar (3rd upper left) . .	9·2	12	5	9·2	12·3	21	25
2. Molar (3rd upper right) .	9·3	13	5·6	9	13·2	18	23
3. Molar (3rd lower right) .	13	12?	6	11·7	. .	7·5	. .
4. Incisor (central upper left) .	. .	. .	. .	8	8·4	14	. .

The most interesting points to notice about these teeth are, firstly, that, whilst the third lower molar is of goodly size, the third upper molars are not so well developed; secondly, that the contact areas displayed by the several molars fully bear out Dr. Keith's previous theory of an anomalous dental articulation.[1]

Of well-formed implements of flint or chert—not to mention the innumerable 'wasters' or 'blanks', relics of the knapper's activity—at least sixty, some of them of larger size than any met with before, were added to the collection in the Museum of the Société Jersiaise. It is unnecessary to figure them here, as they show a uniform Mousterian facies, corresponding in all respects to the types illustrated in my previous paper. Some good specimens of hammer-stones were also obtained. It was noticeable that, the further we proceeded into the cave, the rarer became the finds of implements or chips, doubtless because the artist needed plenty of light for his work.

Having laid bare as much floor as for the time being we cared, or rather dared, to do, and having searched it thoroughly, we proceeded to trench it

[1] For fuller details, see Dr. Keith's paper in *Journal of Anatomy and Physiology*, vol. 46 (1911), p. 12; reprinted, with an additional note, in *17th Bull. Soc. jers.*, 223.

longitudinally to a depth of 5 ft. or a little more. It was hardly to be hoped, indeed, that signs of human habitation would recur at a lower level. On the other hand, we fully expected to reach bed-rock, and were prepared to find the former presence of the sea proclaimed by a layer of sand and pebbles, as was the case at the other cave of similar level, La Cotte de St. Ouen. As a matter of fact, however, neither relics of human occupancy, nor proofs of the marine origin of the cave, nor even any clue to its downward limit, rewarded our efforts. Yet our search was not wholly barren of interest. The substratum of the floor, wherever large stones did not intervene, showed some sort of stratification. Immediately below the coating of ashes came 2 to 3 ft. of clay and granite fragments, the clay being mostly at the top and giving way lower down to a gravel, some of it almost as fine as sand, which was due no doubt to the disintegration of the granite, and could not claim a marine origin. Underneath occurred a well-defined bed, 1 ft. to 18 in. thick, of gritty material, mostly black, but in places reddish brown; under which again was whitish clay interspersed with frequent rock-rubbish. At first we were inclined to think that we had come upon more ashes, but searched in vain for the slightest trace of flint chippings; though a few minute and indeterminable fragments of bone were met with, not soft and decalcified as was the bone-refuse of the hearth, but completely fossilized. Thereupon we noticed that in places this dark bed was tunnelled by round holes, an inch or more in diameter. Mr. Sinel ingeniously managed to take a cast of one of these holes, and the result confirmed the view we had already formed that here we had to do with the impress of branches. Moreover, with the patches of reddish brown appeared to go a certain texture in the soil which strongly suggested wood of some sort. If these determinations be correct—and they were supported by a chemical analysis which pointed to the presence of decayed vegetable matter—we are confronted with the question how the wood got there. It could hardly have grown *in situ*. If, on the other hand, Mousterian man brought it thither in order to undergird his floor—in any case an improbable supposition—we should surely have found some of those flint chippings which everywhere mark his trail. We are thus left with the assumption that a quantity of driftwood was washed down into the cave at some time when vegetation was relatively plentiful, as can by no means always have been the case during the Ice Age.[1]

It remains only to note that, on the opposite or southern side of the gorge in which La Cotte de St. Brelade is situated, there were certain faint indications leading us to suppose that a corresponding cave lurked behind the steep fall of 'head' which veils the back of the recess. Enough was done in 1911, whilst the

[1] At the present day the nearest trees are about half a mile away from the exposed headland into which the cave burrows.

workmen were with us, to verify this guess, and in the spring of this year Mr. de Gruchy, the owner of the property, and I indulged in some rather risky excavation on our own account, with the result that the top of a cavity, at least 8 ft. in penetration and 12 ft. across, has been cleared of the intrusive rock-rubbish to the depth of a yard or two. Whether it will be possible to dig this hollow out without systematic demolition of the talus in rear, with its masses of great stones hung in delicate suspension, remains to be seen. An encouragement to proceed was the discovery of a solitary flake of flint well inside the cave and at least 5 ft. down in the débris, though it was clear that at this point we were still a long way from the bottom. I have some hopes that eventually both on this side and at the back of the gorge there will stand revealed a floor of occupation, more or less continuous with that which has already yielded such good results. If these hollows are the work of the sea, as is almost certainly the case, it is reasonable to suppose that the erosion was distributed right round the gorge, and that man with equal impartiality took advantage of every sheltering nook with which nature provided him in this well-protected retreat.

B. La Motte.

This islet lies off the south coast of Jersey, at the western horn of St. Clement's Bay, some two miles south-east of the town of St. Helier. Its shape is given in the accompanying rough plan, constructed with the kind help of Lieut.-Col. R. G. Warton, Secretary of the Société Jersiaise. La Motte is less than 300 yards away from the mainland, and is accessible at half-tide. The highest part stands 43 ft. above O.D.[1] The coast immediately opposite, to the north, is lower, and remains flat, or even dips a little, until, at a distance of just a mile from La Motte, it slopes sharply up to form the eminence known as Mont Ubé. This projecting spur of the main plateau of the island is about 120 ft. above O.D. at its verge, soon rising to 150; and consists of diorite associated with a porphyritic granite, both kinds of stone, we may note in passing, being represented in the blocks composing the fine dolmen that crowns its summit.[2]

[1] La Motte is one of the regular French folk-names for an artificial mound or barrow, but the word is also applied to any natural eminence: see *Manuel des Recherches préhistoriques: publié par la Société préhistorique de France* (1906), 288. The neolithic inhabitants of Jersey had a predilection for high places as burying grounds, to judge by the situation of most of the dolmens; though Ville-ès-Nouaux is almost at shore-level, and Le Decq, though stated by Falle (*Caesarea* (1734), 258 *n.*) to be built on 'an artificial rising ground,' cannot have stood much higher.

[2] See the diagram, p. 227. A quarter of a mile south of the dolmen, in the orchard of Mr. A. P. Le Jeune, is a fine menhir, standing some 9 ft. above the ground, which is known as Blanche Pierre or La Dame Blanche. Those who believe that menhirs served in some cases as pointers to places of burial will perhaps see in this stone a connecting-link between the dolmen of Mont Ubé and the graves of La Motte. A straight line drawn from the dolmen over the menhir falls, however, a little to

In my former paper I mentioned what I took to be a raised beach running round the islet in the shape of an irregular row of stones that peeps out here and there high up in its almost vertical sides. Having the solid fact to go on that at Tunnel Street in St. Helier[1] 2 to 3 ft. of marine silt with shells overlies, at

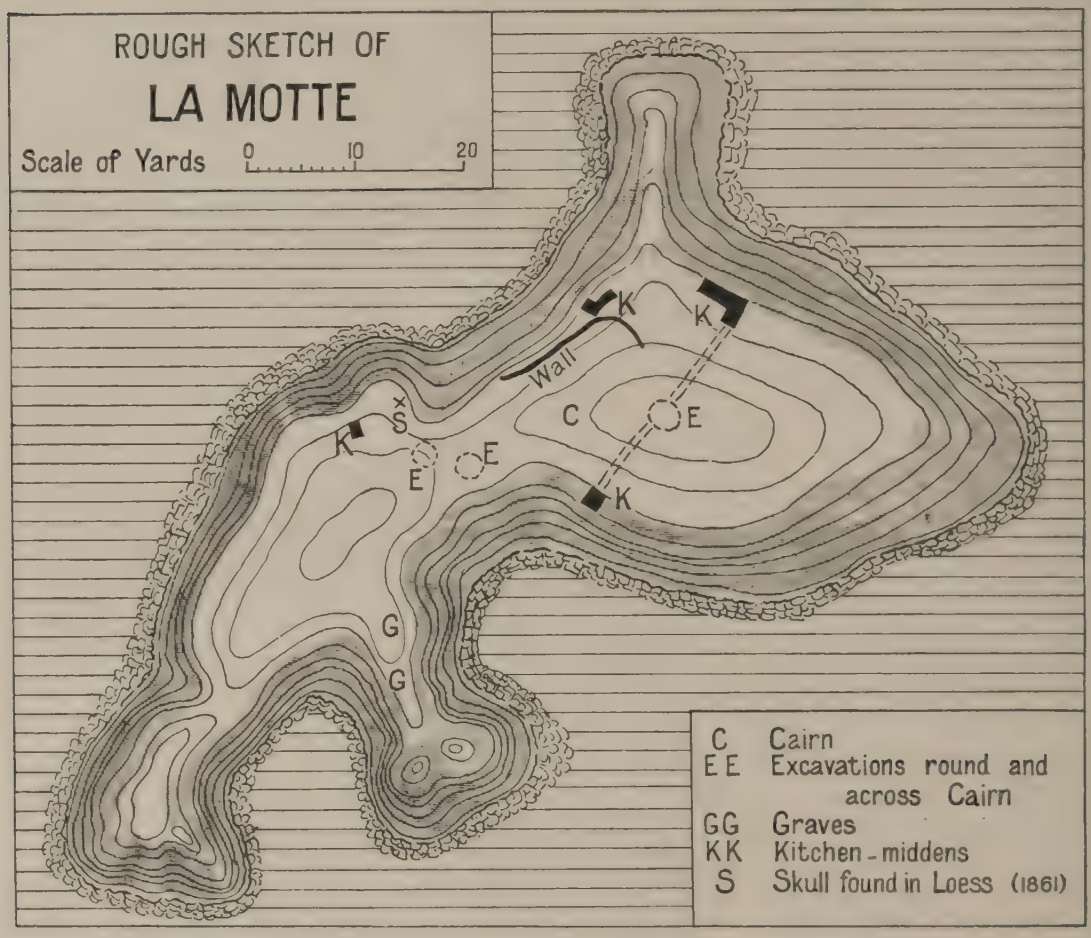


Fig. 4.

about 25 ft. above O.D., the lower peat (which, since a polished axe-head was found in it, whilst peat-stained sherds of coarse pottery also occurred at its base, is of neolithic age), I was moved to cast about for confirmatory evidence of this late-neolithic or even post-neolithic submergence; and believed that I had found it

the east of La Motte, and almost touches the Rocque Berg, or Witches' Rock, a striking outcrop of granite, pitted with weatherings not unlike hoof-marks, which may well have appealed to the fancy of neolithic man, as it certainly did to that of a later age.

[1] See the section given in my article, *Archaeologia*, lxii. 473.

1

2

CIST-LIKE STRUCTURES VISIBLE IN SIDES OF PROMONTORY AT LA MOTTE

1. View from east (nos. 2 and 4). 2. View from west (no. 1).

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at La Motte, as well as, more doubtfully, at the foot of Mont Ubé.[1] Mr. A. R. Wright, of the Irish Geological Survey, who has given special attention to the subject of raised beaches, was the first to set me right. Having accompanied a party of the British Association that, at the close of the Portsmouth meeting in September, 1911, crossed to Jersey, under my guidance, in order to visit our archaeological sites, he pointed out that most of the stones showing in the sides of La Motte were not perceptibly water-worn. Moreover, he noticed independently what had been already observed in June of the same year by Mr. J. W. Sinel, namely, that on both flanks of a little promontory to the south of the islet, where the rain had recently caused some slight landslips, the row of stones was topped by a structure resembling a cist open at the side, or the cross-section of a miniature *allée couverte*.[2]

The upshot was that the Société Jersiaise asked leave of Mr. Gervaise Le Gros, F.S.A., its Honorary President and the owner of La Motte, to carry out excavations on this promontory; whereupon the latter very generously presented the Society with the entire property, to do with it as they willed.[3] Work was begun on October 12 and continued for several days until the state of the weather made it advisable to suspend proceedings for the winter. It was found that the structures visible along the sides of the promontory belonged to graves, built of largish unhewn blocks of the local diorite, with their flattest sides inwards, and covered with broad capstones, on which an additional layer of smaller stones was usually placed. Of such graves six were brought to light during the first campaign, in which I was unable to participate. I was more fortunate when operations were resumed in April, 1912, and from the 10th to the 19th assisted at the unearthing of nine more graves in the vicinity of the promontory, of a large cairn occupying most of the eastern half of the islet, and of an intermittent kitchen-midden, containing a good many sherds of pottery, that was especially well developed along this cairn's north-eastern edge.

In what follows I propose to deal with the descriptive matter under the four heads of (1) system of interment, (2) skeletal remains, (3) artefacts, and (4) geological conditions of the site. Concurrently, I shall consider what light is thrown by these various kinds of evidence on the question of the horizon, or, it may be, horizons, to which these finds are to be referred.

[1] The indications of a raised beach below Mont Ubé (see my paper, *Archaeologia*, lxii. 470) are at best slight; whilst, if such it be, there is no reason why it should not be connected with the mid-level (60-70 ft.) raised beach visible a little further east on the St. Clement's main road.

[2] The illustrations (plate xxx) will give a better idea than any verbal description of what was to be seen.

[3] The Société Jersiaise just at this time, by the kind gift of Lady Tibbits and of Mr. Lionel Mourant Seigneur of Samares, became likewise the proprietors and custodians of the dolmen on Mont Ubé.

(1) *System of Interment. The Graves.*—So far as our excavation has gone it has revealed fifteen graves, all of which, as will be seen from the accompanying chart, are situated either on, or in the vicinity of, the small promontory already mentioned. They occur at approximately the same level, namely, on a floor which may be taken to coincide with the upper surface of the loess that, stayed up between a few upstanding crags, overlies the rocky basis of the island in a thick bed. The clay usually forms the bottom of the grave,[1] and is of such heavy and tenacious quality that it would hold the side stones in place if they were simply set up on end in it, as was probably done. Whether, after they had been covered with their capstones, earth was heaped upon them cannot be determined with any certainty, though there is a fair presumption that this was the method employed. Soil enveloped them to a varying depth, there being only 5 ft. of it at the promontory but as much as 12 ft. over the most northerly graves, where the islet is at its highest. This soil is clearly distinguishable from the underlying loess by its general sandiness; but, whereas for the first foot or two downwards it consists of almost pure white sand, it becomes yellow and more compact, though never cohesive, as the loess is approached. Every grave alike when opened was found to be filled with tightly packed soil of this yellower kind, which had doubtless worked its way in through the interstices of the stones. The pure clay at the bottom and the filling of lighter soil at the top had between them managed to decalcify most of the bones that once reposed in the graves. Hereafter, when nothing is said to the contrary, it may be assumed that a given tomb was found to contain nothing but bone detritus in the last stage of disintegration.

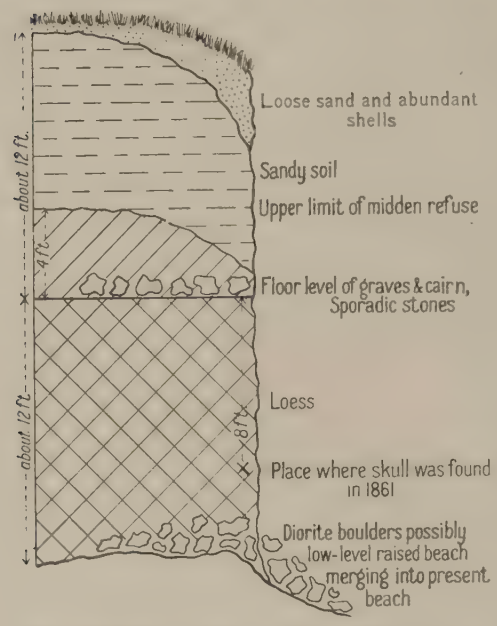
about 12 ft.
about 12 ft.
Loose sand and abundant shells
Sandy soil
Upper limit of midden refuse
Floor level of graves & cairn, Sporadic stones
Loess
Place where skull was found in 1861
Diorite boulders possibly low-level raised beach merging into present beach

Fig. 5. Vertical section showing stratigraphy of La Motte.

Whether orientation was practised is at least doubtful. The graves uniformly lay, it is true, along the general line of east and west; though the direction varied within a few points, being for the most part about ESE. and

[1] All the graves that I helped to open had merely a clay floor, but it appears that nos. 1–4 were more or less paved; though I suspect that, in the reconstructions of them to be seen in the courtyard of the Society's Museum, this feature has been somewhat over-emphasized, in order to render the work as solid and permanent as possible.

1

2

GRAVES AS OPENED OUT IN PROMONTORY AT LA MOTTE

1. View from east (no. 2). 2. View from west (no. 1).

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WNW.[1] On the other hand, out of the four cases in which the state of the remains made observation possible, one (no. 12) showed the head to the east: the skull lying on its right side, so as to face north. But the other two skulls that were recovered (nos. 3 and 14) lay to the west, and, being likewise placed on the right side, faced south; whilst some teeth were found at the western end of another grave (no. 6).

In only one tomb (no. 14) was it possible to get some idea of the position in which the body was buried, and here it was decidedly of the 'crouched' type. The case of double interment, namely that of a child with an adult, presumably the mother (no. 6), should also be noted.

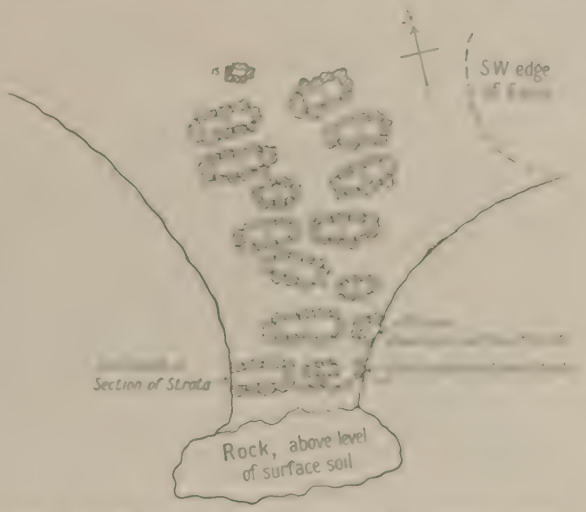


Fig. 6. Plan showing position of graves in western portion of La Motte.

The dimensions of the graves are interesting, since they vary considerably; falling, however, into two distinguishable groups. Eleven would serve as the tombs of well-grown adults laid at full length; though, in the only one of them in which the position of the legs could be studied, these were so flexed, that a foot or more of the available space was left unoccupied. The breadth of these is anything from 16 to 20 in., the widest of these measurements being found in the case of the crouched burial already mentioned. The remaining tombs (nos. 2, 5, 9, 15) are much shorter and narrower, one (no. 15) being a mere box, covered by a single capstone a foot long. These smaller structures may be regarded either as the graves of children—and the great variation in the length somewhat supports this view—or as cists designed to contain a packet of bones, the result of pre-sepulchral decarnation (*s. urnitura*). It is unfortunate that the remains were too far decayed in the tombs of this group to throw any light on the question of their function.

The particulars about each grave—numbered as in the chart—may now be given, by way of completing the descriptive part of the subject.

[1] Intentional orientation is said by S. P. Oliver (Report on the Present State and Condition of Prehistoric Remains in the Channel Islands,' *Journal of the Ethnological Society*, Ap. 1870, 59) to be exhibited by all the dolmens of the Channel Islands, i.e. so that the entrance is to the east and the chambered end to the west. In Jersey Le Couperon and Villes-Nouaux lie almost due E.–W.; Faldouet E.S.E.–W.N.W., and Mont Ube S.E.–N.W.; Mont de la Ville and Les Monts Grantez are likewise stated to have lain more or less E.–W., or, as the French archaeologists say, *Levant Couchant*.

No. 1.—6 ft. (length) × 1 ft. 3 in. to 1 ft. 6 in. (breadth) × 1 ft. 7 in. (depth). The shape resembled that of a modern grave, since the width increased by several inches at one-third of the length towards the east; this feature, however, being repeated nowhere else, may well have been accidental. Mere bone detritus found here, and no cultural objects.

No. 2.—3 ft. × 9 in. × 9 in. A grave of the smaller type; lay end to end with no. 1. A few fragments of reddish pottery without pattern[1] found here; and a small celt, an adapted pebble, which was unfortunately broken in the course of extraction. Directly to the east of this small tomb, about 1 ft. 6 in. away and 9 in. above the level of its floor, occurred the structure which showed in the flank of the promontory at this point. Again, along the south side, about 1 ft. away and on the same higher level, was a row of stones; which, however, had no similar row confronting it on the north side. It seems simplest to explain these two groups of stones as the remains of

Fig. 7. Graves nos. 1 and 2 as seen from above.

a grave similar to no. 1. Such a grave, on the other hand, could hardly have been built subsequently to no. 2, and upon it; for in that case the double layer of blocks forming the capstone of the latter must have effectually interfered with its function. If, however, we suppose that no. 2 was sunk within a pre-existing grave, the contents of which had perished with the lapse of time, or else had been after an interval removed, it would be possible for the missing capstones and the northern side-wall of the hypothetical older tomb to have provided the materials for the construction of the later one. If this be the right explanation, we have here the only proof of succession in the construction of these graves; which are otherwise built on one floor, and, for all we can tell, might have been made about the same time. If the theory of an upper grave be rejected, the row of stones to the south remains unaccounted for; though the structure to the east might plausibly enough be treated as the end of a grave of which the rest had disappeared (as in the case of no. 4) in consequence of a landslip.

[1] A good many of the other graves contained some of these small sherds, the tale of them amounting to about two dozen. In no case was there any reason to think that an entire vessel had been placed within the grave and had subsequently collapsed. Either, then, the broken pieces slipped in by accident, or else were introduced as fragments for ceremonial reasons.

No. 3.—6 ft. × 1 ft. 4 in. × 1 ft. 6 in. Differs from no. 1 only in having its sides parallel.

No. 4.—To the east, end to end with no. 3, and divided from it only by a flat upright stone, was a portion of a grave 1 ft. 3 in. × 1 ft. 4 in. × 1 ft. 6 in. The rest, as might be gathered from the sight of the stones protruding from the side of the bank, must at some time have been carried away by a landslip. In the part that remained was found a skull (pls. XXIX and XXXIII) in a fairly complete state of preservation. Hence the body lay with the head to the west, and, to judge from the position of the skull, lay on its right side, i. e. so as to face south. In this tomb were also found two rough stone implements.[1]

No. 5.—4 ft. × 10 in. × 10 in. A grave of the smaller type.

No. 6.—5 ft. 6 in. × 1 ft. 8 in. × 1 ft. 8 in. The bone detritus was not quite so far gone in this grave, as the remnants of two thigh-bones were determinable; but the most interesting discovery was of two sets of teeth, those of an adult at the west end, and those of a child about six years old in the central part. This is the only case where a double interment can be shown to have occurred.

No. 7.—5 ft. 10 in. × 1 ft. 4 in. × 1 ft. 6 in. Rather roughly constructed.

No. 8.—Very similar in all respects to no. 7.

No. 9.—4 ft. 6 in. × 1 ft. × 1 ft. A grave of a smaller type, comparable with no. 5, though both of these were considerably larger than no. 2, and a great deal larger than no. 15.

No. 10.—5 ft. 6 in. × 1 ft. 4 in. × 1 ft. 4 in.

No. 11.—Very similar in all respects to no. 10.

No. 12.—5 ft. 10 in. × 1 ft. 8 in. × 1 ft. 6 in. In this grave was found a skull in very bad condition, but capable of being preserved and measured. It was at the east end, and lay on its right side, i. e. facing north. A portion of a femur was also determinable.

No. 13.—5 ft. 9 in. × 1 ft. 8 in. × 1 ft. 4 in. Some remnants of bones were recoverable from the detritus, but nothing of great interest.

No. 14.—5 ft. 6 in. × 1 ft. 8 in. × 1 ft. 4 in. Here a skull was found in much the same condition as that in no. 12, i. e. lending itself to preservation and measurement. Moreover, enough of the skeleton remained to show it to be a crouched burial. The head was at the west end; and the body lay on its right side, doubled up so that the knees were about 1 ft. from the chin. One arm was flexed so that the hand supported the head.

No. 15.—1 ft. × 6 in. × 6 in. This was a mere casket, constructed of four blocks covered by a single capstone.

It remains to discuss the horizon to which these graves are to be assigned in the light of their form as distinguished from their contents. Unfortunately it must be admitted that, as far as their form goes, they might be of almost any age. Thus, on the one hand, the palaeolithic inhabitants of the Grottes de

[1] The precarious position in which nos. 1–4 were situated, viz. across the neck of the little promontory, forbade all hope of preserving them *in loco*. The stones were therefore removed after photographing their position and affixing a number to each of them, to the courtyard of the Museum of the Société Jersiaise. Here they have been most successfully re-erected so as to furnish models of the graves as they appeared at the moment of opening them.

Grimaldi, men of the Crô-Magnon type, are in certain cases found to be buried 'in a grave, or in a rudimentary tomb, made by placing stones on edge for the walls, and roofing over with slabs'.[1] On the other hand, a similar mode of interment, which, moreover, involved a commingling of long with short, cist-like graves, such as forms a special feature of the La Motte burials, appears to have persisted at least until the Bronze Age. Thus at Beker-Noz, near St. Pierre in Morbihan, there is a collection of graves showing the same types in juxtaposition. M. Z. Le Rouzic, Curator of the Miln Museum at Carnac, has found a bronze pin there; whilst another indication of relative lateness is afforded by the fact that the cemetery appears to be built partly on the site of a former dolmen, of which one of the stones has been used as the cover of a tomb. This gentleman kindly called the attention of the Société Jersiaise to the possible analogy with La Motte.[2] Col. Warton, Mr. Nicolle, and Mr. Sinel, fresh from their investigations in Jersey, went over to Brittany to make comparisons, but were not impressed by the closeness of the resemblance between the two sets of tombs. They were inclined, however, to think that the cemetery found on the little island of Thinic, to the west of the peninsula of Quiberon, where the graves are likewise of varying dimensions, was exceedingly like that of La Motte, if allowance be made for the fact, due to local conditions, that the graves were built on a foundation of solid granite, and not of clay. The associated implements and pottery would seem to show these tombs to be of neolithic age, but not earlier than some of the dolmens.[3] The skulls found in them were highly dolichocephalic.

[1] W. J. Sollas, *Ancient Hunters and their Modern Representatives* (1911), 372.

[2] M. Le Rouzic laid special emphasis on the fact that both at La Motte (no. 2) and at Beker-Noz a small grave occurs beneath one of the larger type. It turns out, however, that the two cases are not strictly parallel. In the Brittany example, the top of the capstone of the small tomb exactly coincides with the floor of the larger one; and, moreover, the former underlies a corner of the latter transversely, so that we seem to have a simple case of superimposition. In the Jersey example, on the other hand, the upper grave, if such it be, was probably the earlier (see p. 214). In any case, these collocations must surely be regarded as accidental, rather than as forming an intentional feature of the burial system in vogue.

[3] See J. Déchelette, *Manuel d'Archéologie préhistorique celtique et gallo-romaine*, vol. i (1908), 161 f., where both Thinic and Beker-Noz are referred to, the latter being apparently treated as neolithic also. M. F. Gaillard, who excavated the graves at Thinic in August, 1883, is strongly of opinion that they belong to the age of the dolmens. Amongst other arguments, he brings forward the fact that, in all the cist-burials of this type which he has examined, the skeleton is laid on its side, with bent legs and arms turned towards the upper part of the body, in exactly the same crouched position which he has himself frequently observed in dolmen-burials (*L'Astronomie préhistorique*, 106–14). M. E. Cartailhac, speaking of Thinic, notes that we are here in the presence of a very old rite, since the mode of interment is one with that of quaternary times, as seen, for instance, at Laugerie and Mentone (*La France préhistorique*, 277). It is doubtless some such consideration as this that leads M. P. du Chatelier to declare that, after cavern-burials, these cist-burials constitute the most ancient specimens

The Cairn.—A great part of the eastern end of La Motte was found to be occupied by a pile of fair-sized, unshaped blocks of diorite, which was from 4 ft. to 6 ft. high, and extended over an area of about 90 ft. by 15 to 20 ft.[1] These measurements must be regarded as approximate merely, as the herculean task of examining the whole mass of stones was not attempted, and the work confined to the driving of an experimental trench through this portion of the islet from about ENE to WSW., with complete excavation at the west end and along the north side. This exploration sufficed to show that the cairn rested on precisely the same floor as the graves. At the base of the central portion, away from the kitchen-middens about to be mentioned, were plentiful traces of bone detritus in the last stage of dissolution. Cultural objects were as rare here as in the graves, consisting of flint flakes, showing slight secondary chipping in a very few cases, some adapted pebbles that might just pass as celts, and small fragments of coarse pottery without pattern.

Following the north side for 30 ft. and then turning abruptly inwards was to be detected a rough but indubitable wall formed by fitting the stones together with some attention to their shape, and provided on the outer side with a ledge to carry the thrust.[2] Within the angle formed by the wall, as well as beyond it to the east, the stones appeared to be heaped up in utter confusion, and thus presented a great contrast. On the strength of the existence of such a wall the cairn might, perhaps, be thought comparable with those 'false dolmens' of similar masonry which occur in Brittany and elsewhere

of the sepulchral remains of the age of polished stone (*Les époques préhistoriques et gauloises dans le Finistère*, 17). M. G. de Mortillet, however, on the strength of the associated artefacts, classes the Thinic graves as 'Robenhausian', that is, as belonging to the more advanced neolithic; noting in passing that Thinic, now an islet standing off a little way from the mainland exactly as La Motte does, must have been part of *terra firma* in neolithic times (*L'Homme*, 1884, 422–4; cf. *Le Préhistorique*, 597).

[1] The only cairn (as distinguished from the numerous mounds, some of them largely composed of rubble, that enclose dolmens) hitherto discovered in Jersey is the small one found at Villes-Nouaux half-way between the *allée couverte* and the cromlech (9[e] *Bull. Soc. jers.*, 429). Apparently it yielded nothing when excavated in 1883.

[2] Dry-walling occurs in association with several of the Jersey dolmens. On the east side of Faldouet portions of two low walls of rubble, apparently forming a double circle round it, were brought to light (Oliver, *o. c.*, 60; cf. 36[e] *Bull. Soc. jers.*, 67). Les Cinq Pierres was surrounded by a circular band of rubble 2 ft. high and 6 to 8 ft. broad (7[e] *Bull. Soc. jers.*, 81); and the Hougue at Noirmont likewise showed an encircling wall of stones and earth, well put together, 18 in. high and 2 ft. thick (7[e] *Bull. Soc. jer.*, 325). In these cases the object of the wall was probably to mark the limits of the sacred *enceinte*, being thus equivalent to the peristalith of large blocks such as we have at Faldouet and elsewhere. Or the dry-walling may form an integral part of the megalithic structure itself. Thus at Beaupert the chamber was bounded partly by an outcrop of the natural rock and partly by a compact wall of rubble, about 2 ft. high, with a backing somewhat similar to that found at La Motte (7[e] *Bull. Soc. jers.*, 91); the Table des Marthes, a single stone dolmen, rested on pillars of rubble (J. P. Ahier, *Tableaux historiques de la Civilisation à Jersey* (1852), 34); and at Les Monts Grantez the five capstones were supported by dry-walling (*British Press and Jersey Times*, June 1, 1870).

in France, and are usually held to be later than the true dolmens built of megaliths.[1] On such a hypothesis, however, we should have expected to find some signs of a central *cella*, such as perhaps might have been roofed in with wood. As it is, however, the same dense congeries of stones was encountered at every point where excavation was made. If, then, the wall represented more than an attempt to shore up the cairn on a side where there was a tendency to subsidence, and be held to have belonged to some chambered structure, we must thereupon suppose that the structure in question has fallen into utter ruin—a theory which might seek support in the fact that the top of the cairn almost coincides with the present surface of this part of La Motte.

The Kitchen-midden.—Closely associated with the cairn, but occurring also in a fairly well-developed form on the north side of the islet further to the west, is a kitchen-midden or series of kitchen-middens.[2] Along the flanks of La Motte the midden-refuse appeared to be at the level of the clay floor on which both the graves and the cairn rest. Towards the centre of the trench, however, which was dug across the cairn, it seemed to be but a foot or two below the present surface, that is, at least 4 ft. above floor-level; though the ashes were generally traceable amongst the loose stones for some way further down. It might possibly be argued, therefore, that at the edges of the island, where the upper layer of sandy soil is exposed to the erosive action of the weather, the materials comprising the kitchen-midden have sunk to the level of the clay floor from a position originally some 4 ft. higher. The point is not without importance, because the few sherds of pottery that have any determinable character about them invariably come from this series of kitchen-middens, and especially from one at the north-east corner. If their level is that of the cairns and graves, as at first sight it would seem to be, it would serve far more surely as an indication of the horizon of these remains as a whole than if its level is higher, and hence, presumably, at least somewhat later. Besides fragments of pottery, the midden contained amongst its copious ashes a considerable amount of bone refuse, some of it in a calcined condition. It is worth noting that here the bone was not disintegrated, as in the graves, but perfectly sound, perhaps because it had lain on ashes instead of clay. Amongst the specimens submitted to him Dr. Andrews was able to determine bones of ox, pig, and a small variety of sheep. He found also a fragment which seemed part of a human ulna. A

[1] See Déchelette, *Manuel d'Archéologie*, i. 411, section headed 'Dolmens en maçonnerie de pierres sèches'.

[2] The presence of a hearth in the immediate vicinity of sepulchral structures of the neolithic age is fairly common, and must be assigned to some ritual reason, such as the holding of a funeral feast. Human bones may easily find their way into such hearths (as one has done at La Motte), and this fact by itself is no sufficient proof that incineration was practised, much less that there was ceremonial cannibalism. See Déchelette, *Manuel d'Archéologie*, i. 466.

great quantity of limpet-shells, blackened by fire, was also in evidence everywhere, making it plain that the people who once feasted here lived at no great distance from the sea.[1] Some shells of *Trochus* and a few of *Cardium* and *Patella* also occurred, but no *Ostraea*. The presence of such 'beach-combings' tell, perhaps, against the association of the midden with the graves, for not a single marine shell was found in these or on the floor immediately surrounding them, whereas the shells of woodland species of snails, *Helix nemoralis* and *H. hortensis*, were found here.[2] The significance of these facts will be more apparent when the geological conditions come to be discussed.

The Sporadic Stones.—A word must be added about the stones scattered about so freely at the floor-level of the graves and cairn that a more or less continuous line of them shows at most points in the almost vertical sides of the islet. That they belong to a raised beach I am no longer disposed to assert, since but few of them seem to be water-worn. On the other hand, they are not arranged with any appearance of method, and cannot well be held to form a sort of pavement, or to fulfil any other function relating to the system of interment.[3] At the extreme western point of the islet a few blocks occurred together in a small pile; but this would hardly pass muster as a cairn, or even as an attempt at dry-walling. At most, then, we may conclude that the constructors of these sepulchral monuments took care to have plenty of building material lying ready to hand.

(2) *Skeletal Remains.*—It has been already shown that in one grave (no. 1) a fairly complete skull was found (pl. XXIX, fig. 2); whilst two others (nos. 12 and 14) yielded, together with bones, very imperfect skulls, which, being represented chiefly by cranial casts composed of intrusive soil, were, by the exercise of great care, preserved and measured. It will be interesting to compare these three skulls with each other, and with the *calotte* obtained from the loess in 1861 and roughly

[1] Oliver, who knew Guernsey best, speaks of limpet-shells as almost universally met with in the dolmens of the Channel Islands (*l. c.*, 64), and notes their absence at Ville-ès-Nouaux as remarkable. I can, however, find no specific mention of their occurrence in a Jersey dolmen except at Les Cinq Pierres (*1st Bull. Soc. jers.*, 8). It is, on the other hand, interesting to note that on the coast just opposite La Motte in 1813 an inroad of the sea revealed, at a depth of 12 to 15 ft. below the surface, fireplaces with charcoal in them, and 'the scattered shells of limpets bearing the marks of fire'—in fact just such a midden as we have at La Motte (T. Quale, *General View of the Agriculture and Present State of the Islands on the Coast of Normandy* (1815), 7).

[2] The zoological identifications I owe to Mr. Sinel, who has been most generous in putting his rich store of observations and inferences at my disposal, as every other page might bear witness.

[3] That some of the graves were more or less paved has already been noted. We get pavements in association with the Jersey dolmens, for instance, at Ville-ès-Nouaux (Oliver, *l. c.*, 64), Les Cinq Pierres (*1st Bull. Soc. jers.*, 7), Beaupott (*3rd Bull. Soc. jers.*, 92), and La Moye (*5th Bull. Soc. jers.*, 212), and in Guernsey dolmens Mr. Lukis sometimes found several layers of interments separated by pavements of pebbles (Oliver, *ib.*).

described by me in my former paper.[1] Dr. Keith has recently visited Jersey in order to inspect them, and by his great kindness I have been permitted to make liberal extracts from his notes, as well as to reproduce certain drawings of his (pl. XXXII), which will tell their tale more clearly than any verbal account of mine is likely to do.[2]

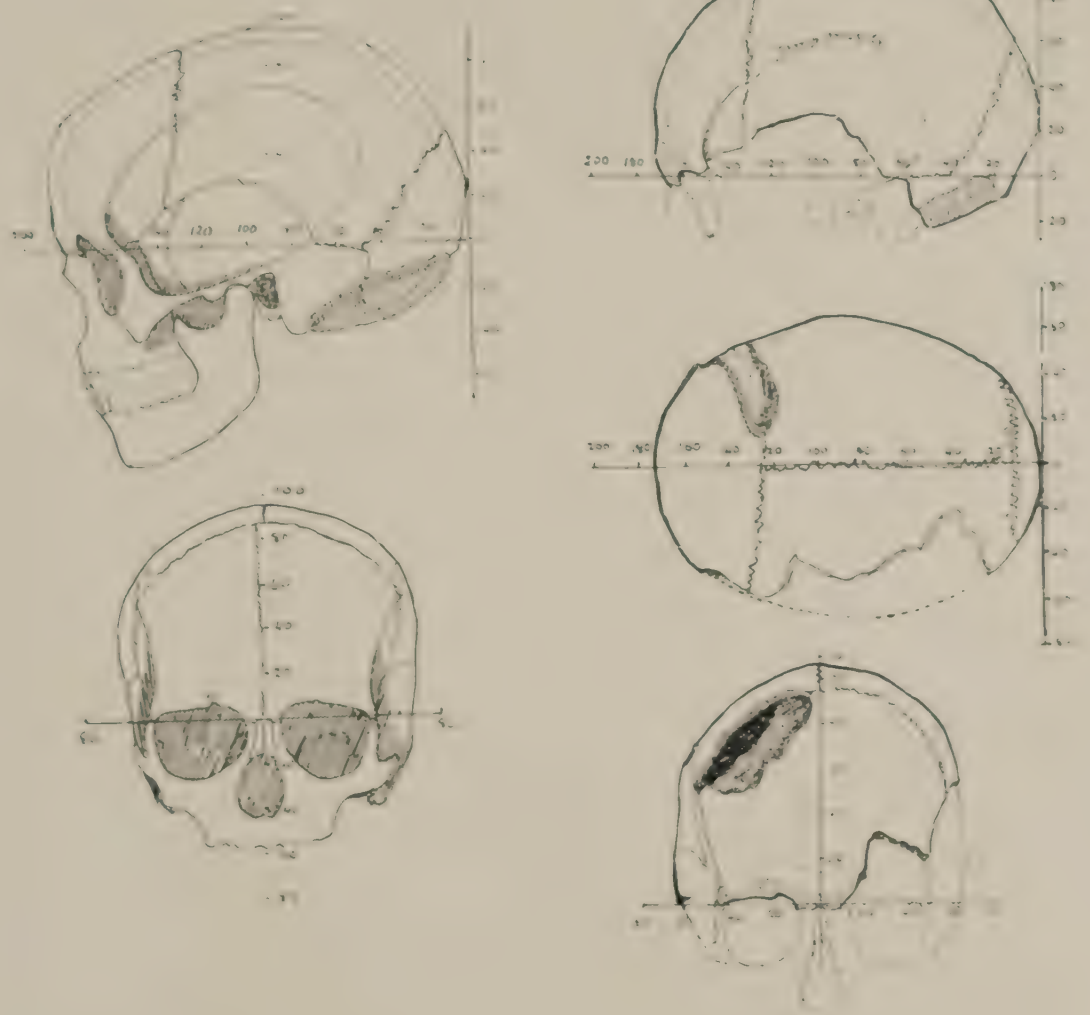
Calotte from loess.—Length, 173 mm.; breadth (estimated from sufficiently perfect right half), about 130 mm.; hence approximate cranial index, 75·6; cerebral height, 106 mm., and superauricular height, estimated at 121 mm. Cranial capacity (estimated on Pearson's system), 1290. Thickness of cranial envelope, 4 to 6·5 mm. (frontal bone at ophryon, 4 mm., upper part, 6·5 mm.; parietal bone, lower part 5 mm., upper 5·2 mm.); thickness of frontal bone at glabella (to end of cribriform plate), 15·5 mm.; thickness of occipital bone at inion, 14 mm. Forehead prominent and nearly vertical. Superciliary and supraorbital eminences moderate. Frontal breadth, minimum, estimated at 92 mm.; supraorbital (from one external angular process to the other), 94 mm. Occiput projecting. Thus we have here a small skull, of moderate thickness, high-vaulted, with straight forehead and moderate brow-ridges; just exceeding the upper limit of dolichocephaly. Dr. Keith further deduces that it is the skull of a woman,[3] inferring this from his estimate (bimastoid diameter, 100–110 mm.; antero-posterior diameter, below 65 mm.) of the area of the attachment of the skull to neck (shaded in diagram); places her age at 30–40 (judging from open state of sutures); and would attribute to her extreme shortness of stature, say, under 1500 mm.

Skull from Grave no. 4.—Length, 186 mm.; breadth, 135 mm.; hence cranial index, 72·6; superauricular height, 111 mm. Cranial capacity (estimated on Pearson's system), 1330. Thickness of cranial envelope, 3 to 5 mm.; thickness of frontal bone at glabella, 13 mm. Forehead projecting, 2 mm. in front of glabella. Median suture. Superciliary eminences form elevations; no deep supranasal notch. Frontal breadth, minimum, 97 mm.; supraorbital, 105 mm. Occiput not greatly projecting. Length of face, nasion to incisor point, 60 mm.; nasion to chin, 105 mm. Breadth of face, bizygomatic diameter, 121 mm. Cheek-bones rather high and prominent. Interorbital breadth, 22 mm. Palate flat-vaulted; length (from middle incisors to line between posterior borders of third molars), 50 mm.; breadth (between second molars), 60 mm. Teeth all present; no dental disease; dentine exposed on chewing surface of first molars; incisors meet edge to edge. Bimastoid diameter, 112 mm.; antero-posterior diameter, 61 mm.; showing neck to have been slender. Thus we have here a smallish skull, of no great thickness, rather low-vaulted, with slightly projecting forehead and moderate brow ridges, somewhat short-faced and with eyes close together. The median (metopic) suture is anomalous; the flat-vaulted palate and incisors meeting edge to edge are primitive characters; there is marked dolichocephaly.

[1] See *Archaeologia*, lxii. 472-3, and the two photographs, *ib.*, pl. lxx.

[2] The notes and drawings have been handed over by Dr. Keith to the Société Jersiaise, and will, I hope, appear in full in their next *Bulletin*.

[3] Not a man, as I ventured to suggest, judging from the rather rugged surface of the skull (*Archaeologia*, lxii. 472).



HUMAN CRANIA FROM LA MOTTE

Left: Cranium from grave no. 4. Right: Cranium from loess.

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Dr. Keith deduces from the slender neck and other characters that it is the skull of a woman.

Skull from Grave no. 10. (Measurements approximate, owing to very imperfect condition.) Length, 184 mm.; breadth, 128 mm.; hence cranial index, 69·6. Superauricular height, 116 mm. Extreme dolichocephaly. To judge from the measurements (24 mm. back to front × 22 mm. at the middle of the shaft) of the imperfect femur found in this grave, the skull belonged to a woman.

Skull from Grave no. 12. (Measurements approximate.) Length, 184 mm.; breadth, 136 mm.; cranial index, 73·9. Superauricular height, 115 mm. Dolichocephalic. To judge from femur found in grave (30 mm. back to front × 21 mm.), the skull belonged to a man.

Conspectus of Cranial Characters.

MEASUREMENTS IN MILLIMETRES.

Provenance of skull.	Probable sex.	Maximum length.	Maximum breadth.	Cephalic index.	Super-auricular height.	Estimated cranial capacity.	Thickness of cranial envelope.	Minimum frontal breadth.	Supra-orbital frontal breadth.	Thickness of frontal bone at glabella.
Loess . .	woman	173	130	75·6	121	1290	4 to 6·5	92	94	15·5
Grave no. 4	woman	186	135	72·6	111	1330	3 to 5	97	105	13
Grave no. 10	woman	184	128	69·6	116	. .	. .	. .	. .	. .
Grave no. 12	man	184	136	73·9	115	. .	. .	. .	. .	. .

A comparison of the three skulls from the graves brings out clearly enough the fact that they belong to one type, namely, that slight-built, highly dolichocephalic type that is usually held to represent the earlier and purer strain in the neolithic peoples of Western Europe.[1] Their relation to the *calotte*, found embedded in the solid loess at least 8 ft. below the floor of the graves, is not quite so manifest. The small, almost pygmy-like proportions, however, which the latter either displays or may be taken to imply, make distinctly in favour of its affiliation to the group from the graves.[2] Certain discrepancies, indeed,

[1] It may be worth noticing in this context that the fragment of the roof of a skull from the dolmen of Les Cinq Pierres was examined by Dr. Keith when he visited Jersey, and pronounced by him to show signs of slight brachycephaly (estimated breadth, 146 mm.; length, less certain, about 175 mm.; cranial index, say, 80 83). It was likewise judged to be brachycephalic by the Rev. R. Belks, one of the excavators of the dolmen; see *12th Bull. Soc. Jers.*, 170. It may be noted that no other osseous remains have been recovered from the Jersey dolmens, with the exception of three skeletons, the skulls of which were apparently missing, found in 1848 at Faldouet in a sidecist (hence probably a secondary interment) and reburied elsewhere by their over-scrupulous discoverer; see Abier, *op. cit.*, 30. Incineration, not inhumation, seems to have been the rule.

[2] Of course, the same or a very similar type of man existed in Europe in palaeolithic times, and some authorities would assign it even to the earlier pleistocene.

must be set down on the other side of the account, such as, notably, the difference in respect to cranial index. But when, as in the present case, it is a question of comparing not average but particular measurements, allowance must be made for the possibility of somewhat wide variation. I am inclined, then, provisionally to assume that the skull from the loess is not contemporary with its deposition, but has somehow slipped down from the old surface corresponding with the floor of the graves.[1] I may add that careful search was made by us at the time of our April excavations in the neighbourhood of the place whence the skull was extracted in 1861. Here we came upon several fragments of bone, much mineralized, and, perhaps, partly charred. Dr. Keith at first was disposed to identify the largest fragment with the part of a human tibia; but the minor pieces, apparently parts of the same bone, showed characters incompatible with this attribution, and he now very doubtfully refers them to rib-bone of *Bos*. A rough flint implement was also found (pl. XXXIII, 2nd row, no. 1), which, as luck would have it, might equally well be regarded as an amorphous palaeolith, or as a piece of neolithic work of the less finished kind. This association of the *calotte* with other finds, however indeterminable they may be in themselves, tells heavily, in my opinion, against the theory that it might have been brought from a distance by whatever agencies laid down the loess, a formation which is always found to be singularly deficient in any relics of human or other life.

(3) *Artefacts. Stone Implements.*—On this head there is very little to say. In grave no. 4 there were found two flat pebbles of shale, and another (broken in extraction) in no. 2, each of which was ground to some sort of an edge and might have served as a rude axe-head. About a dozen other such celts occurred near the graves or under the cairn. They were uniformly of such poor quality that I am inclined to attribute to them a purely ceremonial use. Flint flakes were fairly common in or by the graves and under the cairn, and a few of them showed signs of secondary chipping. Some of these flakes were small and spiky, but it could hardly be said that we found any definite types corresponding to those pygmy flints which are associated with some neolithic sites, and are usually supposed to have been used in lieu of fish-hooks. A curious object found near grave no. 12 was a granite block, 17 in. × 9 × 5, which had evidently first been used as a quern,[2] and afterwards as an anchor, the sides being deeply notched

[1] Yet the *calotte* was found on the north side of La Motte, whereas the graves occur on the south side, a matter of a few yards' distance, to be sure; and we satisfied ourselves by some excavation and a good deal of probing that no graves occur on the floor just above the place where the skull was found in the loess.

[2] Very similar querns were found by the excavators at Ville-ès-Nouaux, in the space between the cromlech and the *allée couverte*, and at Les Cinq Pierres (*Bull. Soc. jers.*, 428). As regards the use to which the La Motte quern was subsequently put, Mr. Nicolle tells me that a Jersey fisherman was photographed the other day in the act of making a stone anchor of the very same size and shape.

ARTEFACTS, PRESUMABLY NEOLITHIC, FROM JERSEY

Top row: no. 1, sherd from lower peat; nos. 2–4, sherds and implement (adapted palaeolith) from Petit Port.
Rest of plate: implement from loess and sherds from kitchen-middens, La Motte.

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and the effects of the fretting of the rope being visible all round. A couple of typical granite mullers and a few more doubtful ones also came to light at the level of the floor. Thus, whilst the evidence from implements is entirely consonant with the view that the grave-builders were at the neolithic stage of culture, it must be allowed that it is mainly of a negative character.

Pottery.—The small fragments from the graves, about two dozen in all, are, with the exception of a piece slightly incised with parallel scratchings, almost characterless. The few sherds that either show a well-marked pattern, or help to throw light on the shape of the vessel to which they belong, were found in one or another part of the kitchen-midden, and chiefly in the well-developed

Fig. 8. Model constructed from sherd with double-chevron pattern.

bed of ashes at the north-east end of La Motte. It has already been shown how uncertain it is whether this midden or series of middens is contemporary with the graves and cairn, in the sense that it belongs to the same floor-level, or is wholly, as it certainly is in part, associated with a level some 4 ft. higher. Meanwhile, it seemed useless, owing to the way in which the midden-refuse had insinuated itself amongst the loose stones of the cairn, to attempt to keep a register of the relative elevations at which the various sherds were discovered. Some particular descriptions and comparisons may be briefly added.

Ornamentation. All the sherds represented in pl. XXXIII, with the exception of those in the top row, are typical specimens from the kitchen midden horizon of La Motte. Most of them hardly call for special notice, since, though the ware is sometimes of coarser and sometimes of finer quality, the patterns are invariably of the incised order, consisting of arrangements of lines or points such as might be produced with the aid of a stick or bone. Neither finger-nail nor string seems to have been employed in the manufacture of these particular pieces. The two fragments shown at the bottom of the plate are from especially well-made vessels; and it might be thought that both of them, or at any rate the piece to the right, with its neatly grooved double chevron, must be of post-neolithic age. The ornamentation of the latter, however, may be compared with that displayed by

a vessel, figured by M. du Chatelier, of well-baked black earthenware, from the (now destroyed) dolmen of Mané-Gravor at Carnac.[1] I give a drawing of a model by Mr. Sinel of the reconstructed pot (fig. 8).

Configuration.—Nothing very important is to be learnt from these sherds as regards the shape of the vessels to which they once belonged. Perhaps the most interesting find was the lug, or ear, of a bowl which is almost the exact counterpart of those to be seen on a food-vessel (fig. 9) from the neighbouring dolmen of Mont Ubé. Such a lug is

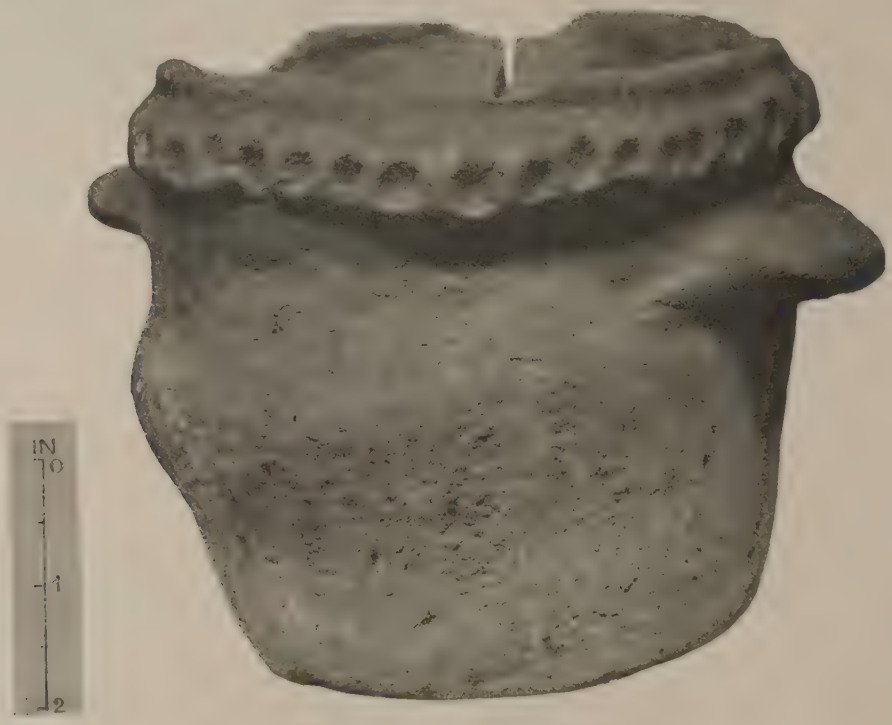

Fig. 9. Vessel with lugs from dolmen of Mont Ubé.

characteristic of the neolithic period, and its replacement by a handle is a sign of the transition to the Bronze Age.[2] From other fragments Mr. Reginald Smith has kindly reconstructed for my benefit two bases of vessels: the first flat (fig. 10); the second, in his view, hollow (fig. 11), it being less easy, though perhaps just possible, to represent it in reverse fashion as the fragment of a saucer-shaped bowl. For the rest, it is to be noted that no piece appears to belong to one of those calciform vases so characteristic of the

[1] See P. du Chatelier, *La Poterie aux époques préhistorique et gauloise en Armorique* (1897), pl. vii, no. 8. As a matter of fact, the kitchen-midden is so near to the present surface that I should not have been surprised to find in it occasional potsherds of quite modern origin. Happily, thanks perhaps to the isolated position of La Motte, no such disturbing elements were there to add to our difficulties.

[2] Compare du Chatelier, *ib.*, p. 9. Mr. Reginald Smith tells me of another good parallel to this lug from a neolithic burial of La Rochette, Drôme, and now at the British Museum (part of the Morel Collection, cf. *Description de la Collection Léon Morel*, 14).

latest phase of the neolithic period in Brittany;[1] the absence of corded patterns pointing in the same direction.

Analogies.—The most fruitful analogies are usually provided by the 'adjacent archaeology', and, as Jersey is certainly not without parallels to these sherds, I will confine myself to a consideration of these. (1) A fragment (pl. XXXIII, top left-hand corner) with pitted markings like those on several of the pieces from La Motte comes from the very bottom of the lower peat, or forest-bed, revealed by the excavations in Tunnel Street.[2] (2) Two other fragments of similar but more elaborate design (pl. XXXIII, top line, second and third from left) are from a hearth or midden at Petit Port. They were found there by Mr. D. T. Doke, together with the implement figured by their side (pl. XXXIII, top line, right), and by him presented to the Museum of the Société Jersiaise. This site, which has never been properly explored, occurs some ten feet from the surface in a cutting made

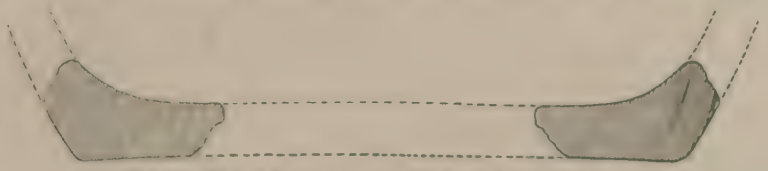

Fig. 10. Sherd forming part of the flat base of a vessel.

Fig. 11. Sherd forming part of the hollow base of a vessel.

in the course of constructing a slipway. From the coarse character of the pottery which it yields in fair abundance (I have myself found at least thirty pieces, together with many flint flakes) I am inclined to assign it to the earlier neolithic. The implement figured is curious, being an indubitable palaeolith (a Mousterian 'point' in shape, but revealing something of the Aurignacian touch in its almost vertical chippings), which has, however, been converted into a notched scraper, the unpatinated edge of which is clearly of later workmanship. (3) The food-vessel with lugs from the Mont Ubé dolmen has already been referred to. This dolmen was in part destroyed in 1856 by the tenant of the ground, a Mr. Bolt, who wanted stone for a house that he was building. Luckily he sold the by-product of his demolition, a goodly collection of implements and pottery, to Dr. Lukis of Guernsey, who presented it to the British Museum, where it may now be seen. The vessels and numerous sherds from this collection seem to me to bear the closest resemblance to those from the kitchen-midden horizon of La Motte, a mile away;

[1] The closest analogies in respect to pottery can be shown to exist between Brittany and Jersey. du Chatelier, *ib.*, p. 10.

[2] See my other paper, *Archaeologia*, lxii. 474. On July 29, 1912, whilst the present article was in the press, Mr. Sael obtained from an excavation in Halkett Place, St. Heliers, several additional sherds found 6 ft. down in the lower peat, the most characteristic piece almost exactly matching in quality and ornamentation the largest of the fragments from La Motte given in pl. xxxiii.

and I am disposed, provisionally, to regard them as more or less contemporary. Now dolmens doubtless differ considerably in age, and, as compared with Ville-ès-Nouaux, whence came the beautiful caliciform vases now in the Lukis Museum at Guernsey, or with Hougues de Millais, which yielded the remarkable cinerary urn with four horizontally perforated handles and an ornamental border of incised triangles, to be seen in the Museum of the Société Jersiaise, the dolmen at Mont Ubé seems to me, judging from its contents, to be distinctly the older. Its pottery does not include the caliciform type; and amongst its flint-implements appear a good example of the *pic* (fig. 12), and also a (small) *tranchet* (fig. 13), objects which are typical of the very early neolithic (Campigny period), and, though

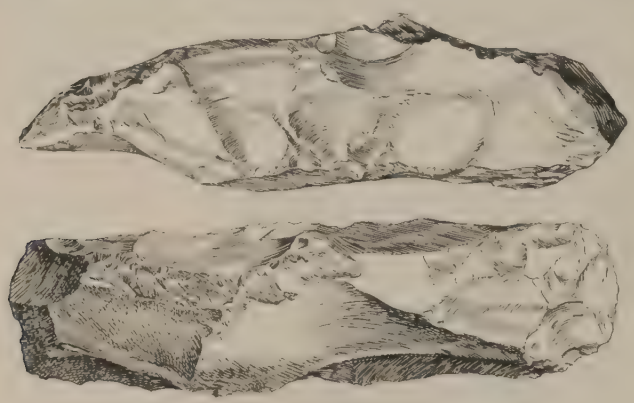

Fig. 12. *Pic* from dolmen of Mont Ubé.

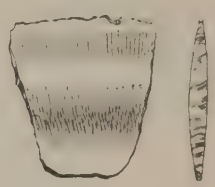

Fig. 13. *Tranchet* from dolmen of Mont Ubé.

they survived into the age of the dolmens, are more likely to mark its inception than its later phases. The rest of the pottery from the Jersey dolmens is unfortunately so fragmentary and of such poor quality that it is of little use for comparative purposes.

The conclusion to be drawn from the somewhat poorly represented artefacts is that at La Motte both the grave-horizon and the midden-horizon, which is if anything later, belong to the neolithic period. M. Déchelette, who has, however, merely seen photographs of the potsherds, is of this opinion; and so are Mr. Reginald Smith (with certain reservations in regard to the piece with the chevron pattern), Mr. Henry Balfour, Professor J. L. Myres, and Mr. Leeds, who have inspected the originals. If we venture to go further than this, the perils of the way increase. We should probably be right in assigning the finds as a whole to the 'age of the dolmens'; but such a determination remains conveniently lax, and need not prevent us from tentatively referring these objects to a comparatively early or, at any rate, undeveloped stage of neolithic culture.

Geological Conditions of the Site.—La Motte has acquired some fame at the hands of Prestwich, who, with the help of a diagram and detailed description, forced it to bear witness to his startling theory of a deep submergence, followed by more or less paroxysmal emergence, that, at the very close of the glacial period,

finally laid down the loess where we now find it.' But it would seem that this lustre was wholly undeserved by the little islet. Prestwich's facts will not bear inspection in the light of our recent investigations. He supposes a violent effluent current at the moment of his hypothetical upheaval of the land to have propelled seawards from its base, namely, the plateau ending in Mont Ubé, a rubble-drift composed of granite and diorite débris mixed with more or less loess or brick-earth. In a word, he regards the basement of the islet as largely consisting of 'head', that is to say, rock rubble in a matrix of loam. To prove this point, he especially calls attention to the 'angular fragments and small blocks of diorite and syenite' that are visible along the higher part of the clayey layer. Whatever be the explanation of the deposition of the loess, and

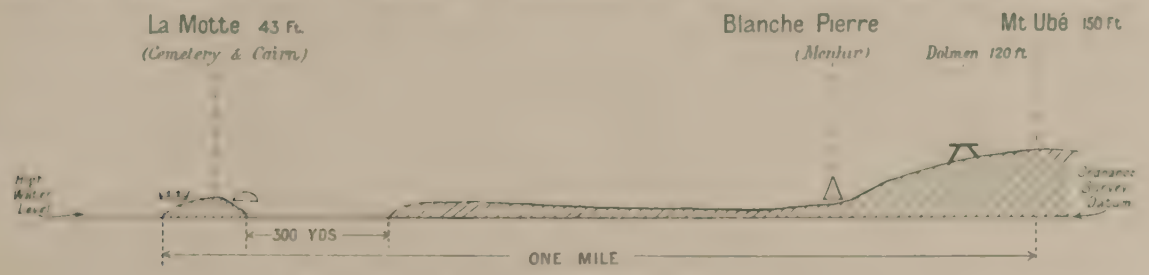

Fig. 14. Diagram showing relation of La Motte to mainland.

however difficult it may be to imagine snow-slide or flood-water effecting its transport from a hill so low and distant as Mont Ubé, we have at least made it clear that the stones in question have something to do with the works of man. Neither are they a raised beach, as I once took them to be, nor are they an integral part of the loess. On the contrary the clay basement is throughout found to be singularly free of rock fragments large or small, and can hardly be said to answer at all to Prestwich's designation of 'rubble-drift'.[2]

Prestwich could plead the fact that 'no traces of palaeolithic man have been discovered on or around the Islands' in support of an early separation of all the Channel Islands from the Continent; which condition ceased for a time only during that neolithic emergence of which the so-called forest-bed is a convincing

[1] See (Sir) J. Prestwich, *Phil. Trans. Royal Soc.*, vol. 184 (1893), A, esp. 916–18. Prestwich's theory has never, I believe, obtained much favour amongst experts. The American geologist, G. F. Wright (*Scientific Confirmations of Old Testament History* (1907), 279), apparently accepts Prestwich's conclusions so far as La Motte goes, and gives a full description with a plan; but these, I suspect, have been simply taken over from Prestwich, and do not rest on first-hand observations of his own. The diagram here given is adapted from that of Prestwich, but seeks to do further justice to the details.

[2] At the very base of the clay, and merging with the stones of the present beach, are some water-worn blocks which Prestwich is probably right in regarding as the remains of a low-level raised beach which was there before the deposition of the loess.

proof. But, as I argued in my other paper,[1] it would now seem, on the one hand, that Jersey was continental in Mousterian times; but, on the other hand, that it stood at or below its present level at some period between the mid-pleistocene and the neolithic emergences. Now the loess was certainly in part, and perhaps finally, deposited during a period of emergence, to judge by the fact that round Jersey it underlies the present sea-floor. Hence the diluvial agencies, which Prestwich expressly excludes from a share in its formation on the ground that Jersey was insular,[2] may have to be invoked after all. In other words, river floods and glacial inundations on a continental scale must have extended to Jersey, if it was then attached to France.

At the time of the final deposition of the loess, then, there may well have been a continuous spread of it running out from Mont Ubé to La Motte and likewise clothing the rocks for a considerable distance seawards, a proof being that the rock on which Icho Tower is built, a mile and a half out to the south-east, has a clay cap similar to that which forms the basement of La Motte. If, as the evidence from Tunnel Street seems to prove,[3] there was a return to the present level or actual submergence both immediately before and immediately after the emergence marked by the forest-bed, this would account for the present discontinuity between La Motte and Mont Ubé. If even slight submergence took place, the sea would wash in between them and erode away the tongue of clay.[4]

Be this as it may, when the clay basement of La Motte was used as a burying-ground by neolithic man it must have been part of the main island of Jersey, or at any rate it cannot have been cut off by the sea, as it now is, during the time when the cap of lighter soil, some 12 ft. high in places, was laid down upon it. At present this upper layer is being eroded away rapidly, especially along the edges, by every wind that blows. By no conceivable possibility could the process be reversed, so that soil should collect here under aeolian influences, if land and sea stood in relation to each other as they do now.

Must we therefore suppose that the graves were constructed during the time of emergence corresponding to the forest-bed, and that, after their construction, this condition continued long enough for 12 ft. of soil to be deposited above

[1] *Archaeologia*, lxii. 454, 476, 479.

[2] Prestwich, *ib.*, 914. If the boulders at the base of the clay at La Motte are to be regarded, with Prestwich, as a raised beach, they would have to be referred to a pre-Mousterian low-level submergence for which there is definite evidence, as I have shown in *Archaeologia*, lxii. 469, 476, 479.

[3] See my paper, *Archaeologia*, lxii. 473–4, 477–9.

[4] I understand from Mr. Sinel, who once lived in Samarès Lane, viz. on the line between La Motte and Mont Ubé, that a well sunk about 500 yards from La Motte showed a bed of shingle and sea-gravel at 12 ft. below the surface; whilst further inland, about 800 yards from La Motte, the sinking of another well showed blue marine clay at about the same depth. Here we clearly have the bottom of the old channel. Some clay, as well as sand, overlaid the marine layer, but was such as might be ranked as more or less modern alluvium.

them by natural agencies?[1] I do not consider that the geological conditions taken by themselves can supply the answer to this question. La Motte lies so near to the shore that marine erosion may well have brought about its insulation in comparatively recent times. As late as April, 1813—that is, of course, before the present sea-wall was built, a structure liable to be breached severely by the waves, as was apparent only last winter—about 20 ft. of the sand-dunes that then stood opposite to La Motte disappeared at one fell onset of the tide.[2] A little to the eastward, at Le Hocq, where there are islets—or rather rocks covered with the last remnants of their loess-cap—which stand to the coast in much the same relation as La Motte, we have direct evidence that the severance was effected within historic times.[3] The chances are, then, that, even if, as there is some reason to think, during the neolithic age the land slowly[4] sank to something like its present level, the mainland of Jersey continued to extend to La Motte, and probably to the high rocks a mile or so further out to sea. Meanwhile, it must remain a rather doubtful point what precise distance separated La Motte from the sea at the time when the graves were made. To go by the present 10-fathom line, the shore need not have been more than four or five miles off whilst Jersey still formed part of the Continent. That it was not very far off is indicated by the occasional water-worn blocks used in building the graves;[5] and likewise by the stone anchor found near one of them. That it was not very

[1] The graves may have been covered over with soil to a certain depth, though in that case we should have expected the clay on which they rest to have been used. But the extent and general character of the light-soil cap of La Motte absolutely precludes the notion of its being an artificial mound.

[2] Quale, *o. c.*, 7 *n.*

[3] John Poingdestre, at one time Fellow of Exeter College, Oxford, writing about 1682 says: 'Of late yeares within the memory of most men two great Rocks lying one behind the other in the Sea at a place called Le Hoc in St. Clements Parish, the neerest of which is seuered from the Land a Bow-shot at full sea, were ioyned to it, & serued many men yet aliue to drye Vraic upon' ('Caesarea, or a Discourse of the Island of Jersey,' *Soc. jers., Publication 10me*, 75); whilst in 1781 the States of the Island were called upon to resist invasion, not only on the part of the French but likewise on the part of the sea at this same spot ('Actes des Etats de l'Isle de Jersey, 1781, Juin 18.' *Soc. jers., Pub.* 10me). The masses of shells of *Trochus umbilicatus* (Mont.) and *Littorina obtusata* (L.) on the top of La Motte have been adduced as evidence by a learned conchologist, Mr E. Duprey, to show that it must formerly have served as a drying-ground for seaweed, in the way that the adjacent outliers of the coast do now (*12e Bull. Soc. jers.* 221).

[4] A sufficient proof that the submergence was gradual is that the trees of the forest-bed still stand where they grew. This fact in itself might have convinced the Abbé Manet that his *épouvantable catastrophe* of A.D. 709 was a fable (*De l'état ancien et de l'état actuel de la baie du Mont-St.-Michel* (1829), 10).

[5] See the map, *Archaeologia*, lxii. 454.

[6] Some good specimens of these may be seen in the graves preserved in the Society's courtyard. We get water-worn blocks, by the way, in several of the Jersey dolmens, e.g. Cinq Pierres (*1er Bull. Soc. jers.*, 7) and Ville ès-Nouaux (*18e Bull. Soc. jers.*, 244).

near is shown by the shells of woodland snails—as distinguished from the species found on the sand-hills—which occurred on the ancient floor; as well as by the fact that this floor was of pure clay without admixture of sand, as if the formation of dunes in this flat and exposed district was as yet precluded by the remoteness of the shore-line. Hence, so far as the geological conditions take us, we are not without grounds for believing that the date of these graves must be put well back into the forest-bed phase of the neolithic period.

It only remains to add that this conclusion is entirely supported by the rest of the evidence adduced. The system of interment is quite compatible with the attribution of a neolithic or even earlier horizon. Similarly, the skeletal remains are of the long-barrow order, on the one hand showing no trace of the brachycephaly so characteristic of the Bronze Age, and, on the other hand, being not without close resemblance to various types assignable to the Palaeolithic Age. Finally, the artefacts have a neolithic facies. Indeed, the great mass of the potsherds are of one character with the pieces discovered at the very base of the forest-bed at Tunnel Street and Halkett Place. It may be true that these objects are probably to be set down as belonging to the 'age of the dolmens'; but this is an elastic expression which may well cover a somewhat lengthy process of cultural evolution and of sheer time.[1] We shall perhaps not greatly err, then, if we provisionally assign the La Motte finds as a whole to a mid-neolithic horizon.

[1] That the dolmens go back to the time of the forest-bed emergence is suggested by their occurrence below high sea-level in France. See, for instance, M. Baudouin, 'Les Mégalithes submergés des Côtes de Vendée,' *L'Homme préhistorique*, i (1903), no. 5. Indeed, in the neighbourhood of La Motte there is more than one sporadic block amongst the rocks covered by the tide that looks as if it were a megalith. Thus Mr. Sinel has discovered what he takes to be a fallen menhir some 12 ft. long, at half-tide level about 250 yards south-east of the Table Rock at Le Dicq, the stone being of close-grained granite unlike that of the neighbouring rocks. Also at half-tide level a third of the way from the jetty of La Rocque to Seymour Tower there is an isolated block of conglomerate from the north-east corner of the Island, weighing about 15 tons, which is probably the capstone of a dolmen; though Père Noury (*Géologie de Jersey* (1886), 76) thinks that it must have been dropped there out of a barge by some one who intended to build a grotto or decorate his garden with it!

X.—*The Plan of the Church and Monastery of St. Augustine, Bristol.*

By Roland W. Paul, *Esq., F.S.A.*

Read 15th February, 1912.

Many plans exist of what is now the Cathedral at Bristol, but there are to my knowledge none to a sufficiently large scale to be of much practical use, and in those that do exist, with two exceptions, the buildings south of the church, that surround the cloister court, are either only roughly outlined or are omitted altogether. The two exceptions are (1) the Ordnance Survey map of 1884, which shows buildings now destroyed, and (2) a plan (without scale) which accompanies a paper by the late Mr. E. W. Godwin, F.S.A., published in the *Archaeological Journal* for 1863.[1] This is little more than a block plan, but it is the only attempt hitherto made to identify the various monastic buildings. Since this latter plan was made a road has been taken through near the gate-house, involving the destruction of the buildings that stood on the west side of College Green at that point, and since 1884 another road has been made on the south side across the site of some of the then existing monastic buildings. The precinct is now therefore considerably reduced in area; originally it appears to have included College Green, while the monastic land extended south to the rivers Frome and Avon. The plan (pl. XXXIV) includes all the monastic buildings now remaining, and shows the position and extent as far as possible of those destroyed. Some old plans, the property of the Dean and Chapter, have quite recently been placed at my disposal, which have enabled me to add the buildings west of the church and adjoining the gate-house.

There is a very large mass of material to be found in various volumes relating to the history and gradual growth of the monastery. For our present purpose, however, four of these are of the greatest importance in relation to the ground plan: (1) Smythe's *Lives of the Berkeleys*; (2) the *Chronicle of Abbot Newland*, a copy of which is at Berkeley Castle, and has been published in the *Proceedings of the Bristol and Gloucester Archaeological Society*, vol. xiv; (3) the *Itinerary* of William Wyrcestre, considerable extracts from which will be found in the late Mr. E. W. Godwin's paper on the Cathedral in the *Archaeological Journal*;[1] and (4) the Report of the late Professor G. E. Street to the Restora-

[1] *Arch. Journ.* xx. 38 ff.

tion Committee in June, 1867, in connexion with the rebuilding of the nave of the Cathedral. Much of the information in these documents is of the utmost value in connexion with a plan of the church, the places of burial, and monastic buildings. The want of such a plan has lessened considerably the value of the papers; with it much that is vague becomes clear. The quotations from these sources are all acknowledged in their place.

It will be most convenient to divide the history of the plan into four periods: (1) from the date of the foundation in 1142 to 1298, (2) from 1298 to 1481, (3) from 1481 to the Suppression in 1539, and (4) from the foundation of the bishopric to the present day.

Period 1.

The site chosen by Robert Fitzharding, first Lord of Berkeley, for his foundation of Austin canons of the order of St. Victor was outside the city walls, on rising ground on the right bank of the river Frome near its junction with the Avon, sheltered on the north by a range of hills, and open to the south and west. The precincts included (as already mentioned) the 'Green Place' on the north, referred to as the 'sanctuary' (in which there was a chapel of St. Jordan). East of the church was the 'masonry', and eastward again in latter days stood and still stands the church of St. Augustine the Less, which was the church of the parish. There appears to be no record of the nave of the abbey church ever having been used for parochial purposes.

We know the chief dimensions of the nave of Fitzharding's church; the measurements are given by William Wyrcestre, and the foundations themselves were discovered in 1867, when the ground was cleared for the new nave, and the general dimensions are given with some detail by the late Mr. G. E. Street in his report.

These dimensions and details give us a nave 90 ft. in length and 56 ft. in breadth, two belfries, 16 ft. from east to west, and probably slightly wider than the side aisles (as at Llanthony). There was a north porch, and the measurement of the width of the 'old church', 85 ft. 4 in., given by William Wyrcestre, which hitherto has been a puzzle, seems to have been taken across the church from the south to the north through this porch.

To judge by the fragments discovered of one of the piers in the presbytery, the spacing of the nave piers must have been about 18 ft. centre to centre. The length is 90 ft., as given by William Wyrcestre, and this would divide into five bays, exclusive of the bay at the west which was flanked by the belfries. The north porch appears to have been in the first bay east of the north-west belfry, and opposite to it, in the south wall, there may have been a doorway to the cloister. There was undoubtedly a second doorway in the

easternmost bay on the south side, although the earliest approach to the cloister appears to have been from the west wall of the south transept.

The main walls of the transepts are still largely Norman work, particularly those of the south transept.

The length and form of the presbytery must for the present remain doubtful; some foundations were exposed when the quire pavement was re-laid in 1895, but no very accurate measurements seem to have been taken. Some traces apparently of one of the Norman piers were found near the second existing pier on the north side and rather to the west of it. Near this there was a foundation crossing the church, with another about 13 ft. eastward. It is not now possible to make any further examination in the quire, but it is to be hoped that some day the paving in the side aisles may be examined, and the length of the Norman aisles determined.

I have suggested on my plan a presbytery of three bays in length, the aisles of two bays only, resembling the arrangement at Llanthony, and, so far as the projection of the presbytery is concerned, at St. Frideswide's, Oxford, both Augustinian houses.

The Norman church, therefore, appears to have been a simple cross church with a total length of about 200 ft., a width across nave and presbytery (including the aisles) of 56 ft.; transepts and crossing 109 ft. in length and 29 ft. in width. This latter gives us approximately the inside measurements of the central tower, and that of the width of the central aisle of nave and presbytery. I have shown the piers as square on plan, as we do not know their form.

The date of the foundation is 1142; the date of a consecration April 11, 1148; if the latter date is correct it probably marks the completion of the eastern arm and transepts only, and the considerable bend that the nave now has to the north (doubtless following the main axis of the Norman nave) points to a break in the work at the western arch of the crossing and to the erection of a temporary wall, making the accurate setting out of the nave a matter of greater difficulty than it would otherwise have been. Fitzharding, who had become a canon of the monastery he had founded, died 'this fifth of February, St. Agatha's day, 1170',[1] and was buried 'between the stalls of the Abbot and Prior there, and next to the Abbot's stall in the entering into the quire: by whom was after laid the body of the Lady Eve his wife'.[2] Dame Eva died in 1173.

The Monastic Buildings.

The cloister and monastic buildings surrounding it were on the south side of the church. The outer court was on the west side, with the great

[1] Smythe, *Lives of the Berkeleys*, i. 39. [2] *Ibid.*, p. 59.

gate on the north. In describing the church and buildings it should be noted that there is a considerable fall in the levels from north to south—gradual in some places and abrupt in others. There was a drop of about 4 ft. from the floor of the nave to that of the cloister, and roughly at a line drawn across

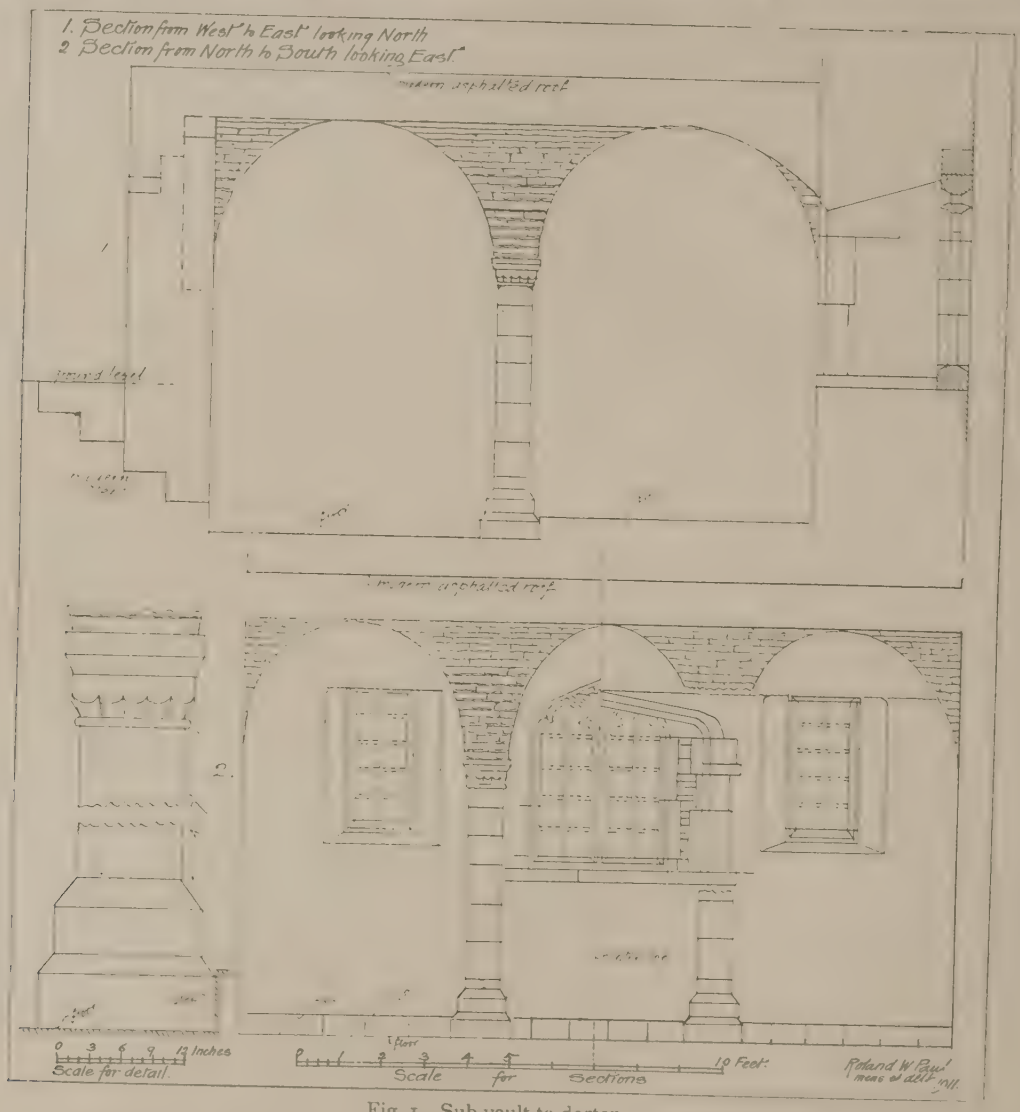
1. Section from West to East looking North
2 Section from North to South looking East
Scale for details
Scale for Sections
10 Feet
Roland W Paul

Fig. 1. Sub-vault to dorter.

the site from east to west 115 ft. south of the church was a further drop of 11 or 12 ft. If we take the dimensions that are given us, it appears that the chief buildings round the early cloister were all built on the upper level, but that there were some buildings at a lower level also. Wyrcestre gives the length

of the cloister as 90 ft., corresponding with that of the nave, and his measurement was probably taken along the north walk. There are distinct traces in the east walk, at the corresponding distance from the old north-east angle, of a return wall, showing that the cloister was about 90 ft. square. On the east side were (1) the chapter-house with a vestibule, (2) a slype to the cemetery, (3) the door and day-

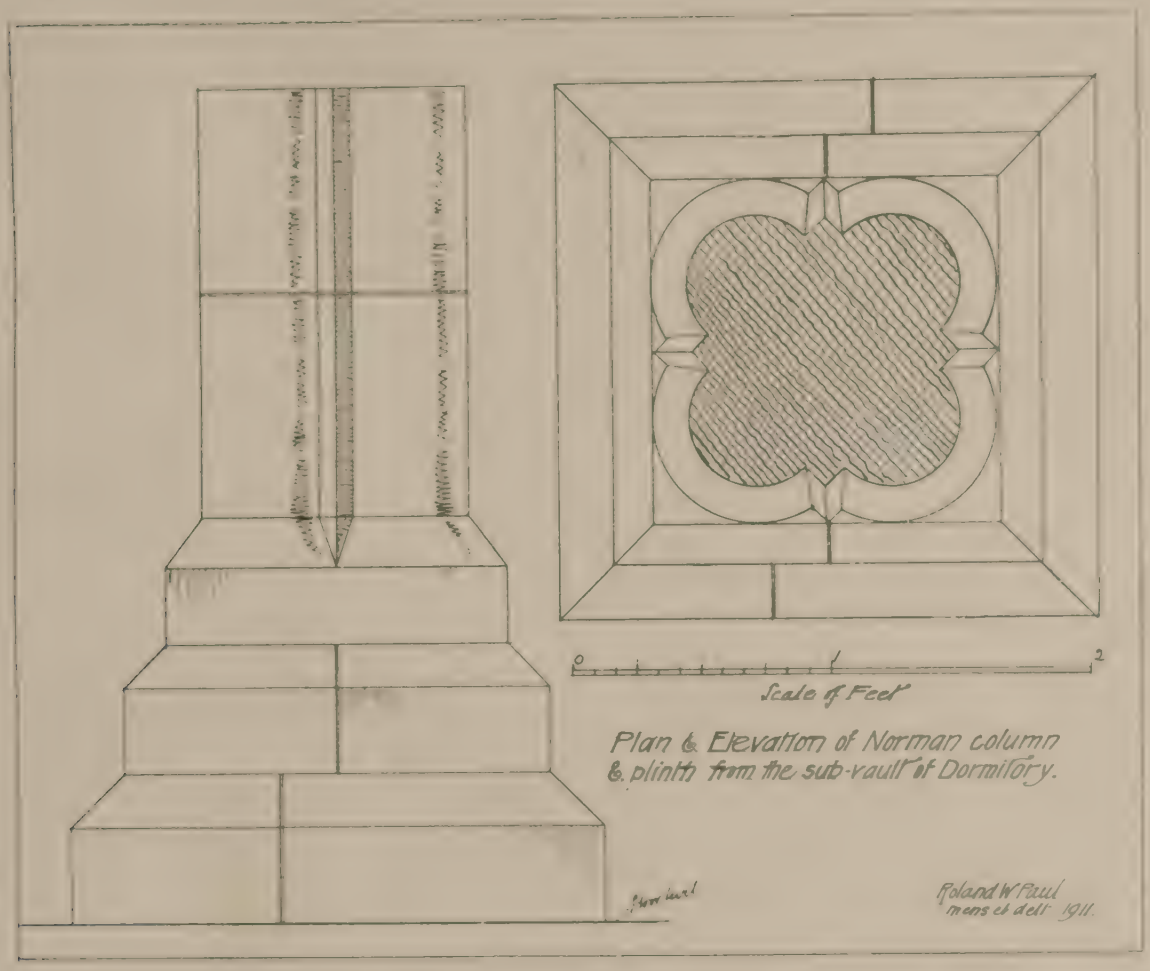

Fig. 2. Norman column from dorter sub-vault.

stairs to the dorter, and (4) the sub-vault of the dorter, which appears to have extended south about 70 ft. The last bay was beyond the upper level and had a second basement, and on the east side it projected about 20 ft. beyond the east wall of the dorter. The lower basement of this wing still exists. It is early work with later windows inserted, covered with a cross-barrel vault supported on two slender columns (fig. 1). There were evidently other buildings south of this.

and a small pilaster buttress remains in the ruins of the later bishop's palace that has every appearance of being Norman work (see plan, pl. XXXIV).

The dimensions of the chapter-house given by William Wyrcestre are length 74 ft., breadth 25 ft. The breadth corresponds with the present building, but the length now is only 42 ft. But if we include the vestibule, which Wyrcestre does not name separately, and add an apse, we get Wyrcestre's length exactly.

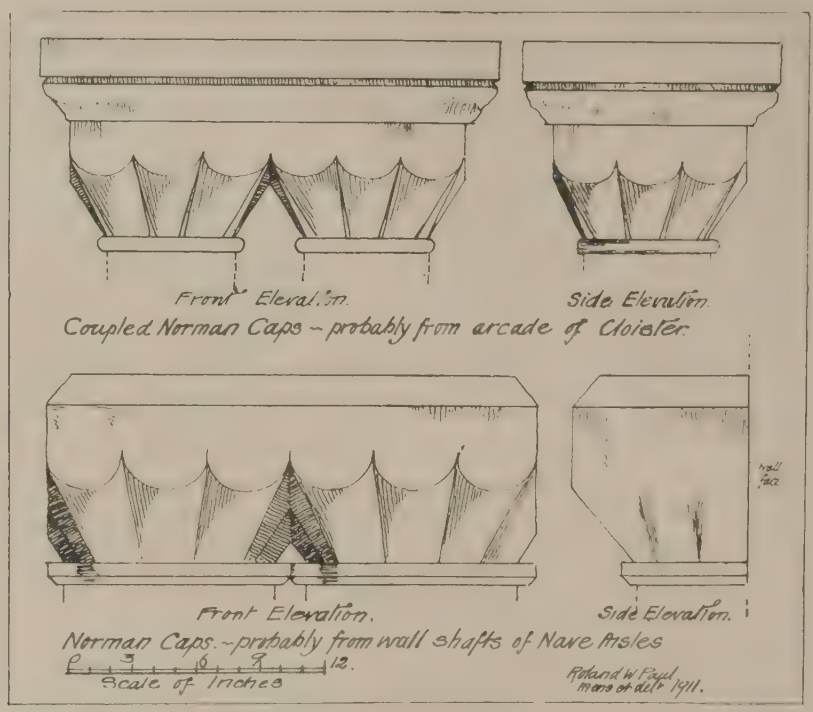
Front Elevation.
Side Elevation.
Coupled Norman Caps – probably from arcade of Cloister.
Front Elevation.
Side Elevation.
Norman Caps. – probably from wall shafts of Nave Aisles
Scale of Inches
Roland W. Paul

Fig. 3. Norman capitals.

Excavations were made some years ago as it was thought that the chapter-house was one bay longer, but nothing was found, and I think that the apse theory is probably the correct solution. The ground outside is now several feet above the floor level.

The doorways to the slype and day-stairs have now been utilized as a quire vestry, and the wall that undoubtedly divided them has been removed.

The doorway to the day-stairs still retains the hinge pins of the door; the stairs have been destroyed. The sub-vault of the dorter was about 29 ft. in width. It was divided into two aisles by two, perhaps three, columns down the centre; one of these was found *in situ* when a grave was made in the churchyard in 1895 (fig. 2). The exact position was fortunately noted by Mr. Hayward,

[1] The plan of this chapter-house should becompared with that at Durham.

the sub-sacrist of the cathedral, to whom I am indebted for the dimensions then taken. It was 6 ft. below the present level, that is about 3 ft. below the paving of the cloister, 15 ft. from the wall of the cloister, and 21 ft. from the wall of the lay clerks' vestry. There are two examples of coupled capitals now lying in the chapter-house vestibule: the larger ones are probably from the nave aisle wall-shafts, the smaller from the Norman cloister arcade (fig. 3).

On the south side of the cloister was the frater, and William Wyrcestre gives its size as 34 ft. 8 in. by 21 ft. 4 in. These dimensions evidently refer to the Norman frater, not to the present one. If placed almost centrally on the south side, it would have allowed spaces on either side for an approach to the frater and for passages or stairs leading to the lower level.

The only building or fragment on the west side of the cloister was destroyed before the new works on the nave were begun in 1867. It consisted, according to Mr. Godwin,[1] of a staircase evidently of Norman date, to which later work was attached. He shows it on his plan, but with no detail, and I have added it to mine from this source. It appears to have been a staircase at the north-west angle of the Norman cellarium, the gable of which must have partly projected beyond the west front of the church, and attached to it appears to have been later work belonging to the west front of the new nave begun by Newland.

Slightly to the south of this, in the east wall of the present deanery, are Norman arches, and the lower part of the south wall of this building and the greater part of the neighbouring entrance to the abbot's lodgings are also of Norman date. In the south-east angle of the existing frater are two lancets, one over the other, showing the existence of a Norman staircase at this point. The general plan of these early buildings seems therefore to have been arranged round the cloister with lesser buildings at the south-east and south-west angles.

The lower part of the gate-house is rich Norman work, but this appears to have been re-worked at a later date when the gate-house was rebuilt, and incorporated with the late Gothic building by Abbots Newland and Elyot.

The Thirteenth Century.

The only additions to the church in the thirteenth century were the lady chapel, east of the north transept, and a chapel on the east side of the south transept. An Early English piscina remains in the south wall of the latter, and there is also a piscina and aumbry combined in the south-east angle of the transept marking the site of a side-altar (fig. 4). What is undoubtedly the platform on which this side-altar stood is still to be seen in the pavement. It is raised

[1] *Arch. Journ.* xx. 38.

about four inches above the paving of the transept, and now forms the first step of the later stairs. The platform itself is of rough appearance, and composed of three or four irregularly shaped slate-coloured stones with a border of Dundry stone; in two of the former are what appear to be the mortices in which the supports of the altar were placed. The wall at the back is now plastered over; possibly if the plaster were removed further traces of this altar would be found; there are remains of colour on the wall a little further north.

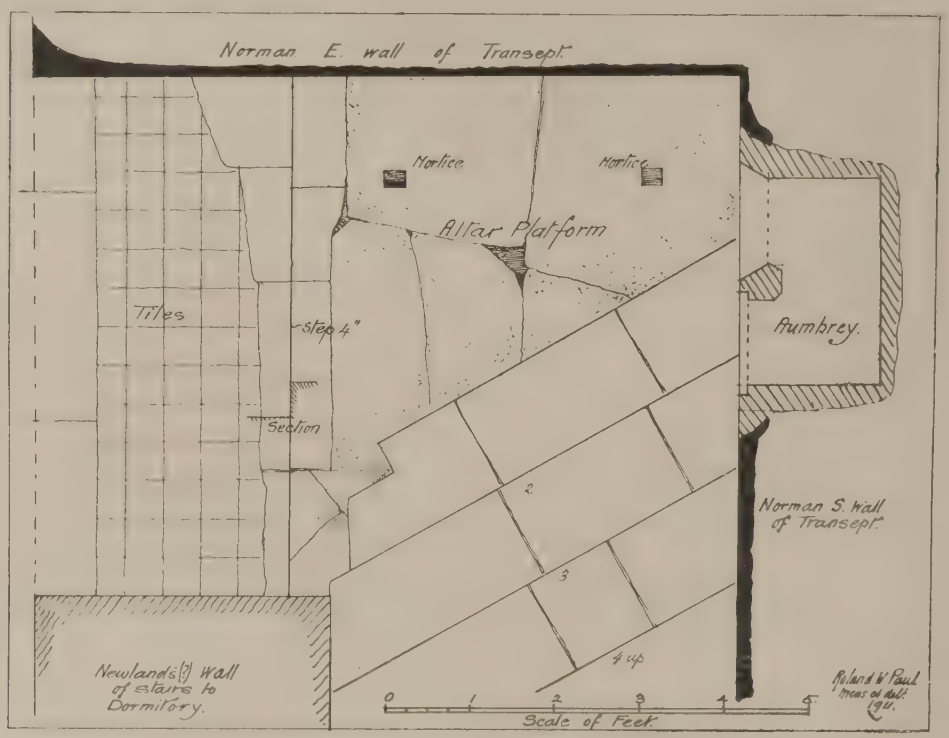

Fig. 4. Plan of chapel on east side of south transept.

The night-stairs to the dorter must, I think, at this time, and for some time after, have been placed against the west wall of the south transept (as at Hexham), and led to a passage over the vestibule of the chapter-house, still in existence, and used as the consistory court.

We have several records of burials during the thirteenth century. Abbot David, 1234 (July 3), is 'buried in the Lady Chapel having a marble stone with a head upon it and a cross of the same'.[1] This no doubt is the one at present in the pavement close to the north wall of the transept (fig. 5).

Abbot William Long (1264) is buried 'afore the Image of Our Lady in the

[1] Abbot Newland's Chronicle.

north cross aisle': subsequently, Nov. 20, 1204, Abbot Hugh de Dodyngton is buried 'straight before the Image of Our Lady in the cross north aisle atwixt two other abbots'. We are not told the name of the third abbot interred here.

There were also burials of members of the Berkeley family. Robert de Berkeley died 1220, and was buried in the north aisle of the church over against the high altar in a monk's cowl.[1] Lady Julian, his first wife, who died in 1217, 'lieth buried in the south aisle of the said monastery under a white marble stone',[2] and his second wife Lucy (who afterwards married Hugh de Gurney) died January 18, 1234, and 'lieth buried near the said Julian under another white freestone, beside the rood-altar in the entry of the south aisle in the said monastery'.[3] This latter reference is of interest, as it gives us the first record of the existence of the rood-altar. Maurice (2nd), who died in 1281, is 'buried in the north aisle next the altar of St. Maurice'. It must, of course, be borne in mind that this burial must have been in the north aisle of the Norman church. No doubt when the presbytery was enlarged the body was transferred to a corresponding position in the new church, which would be the easternmost recess in the north aisle of the presbytery. 'Thomas 1st Lord of Berkeley died Nov. 29th, 1243, and is buried in the south aisle in the arch next the Rood Altar.' The rood-screen with the altar against its west face, flanked by doorways, would, in the Norman church, have occupied the position between the first pair of piers of the nave west of the 'crossing' (see plan).

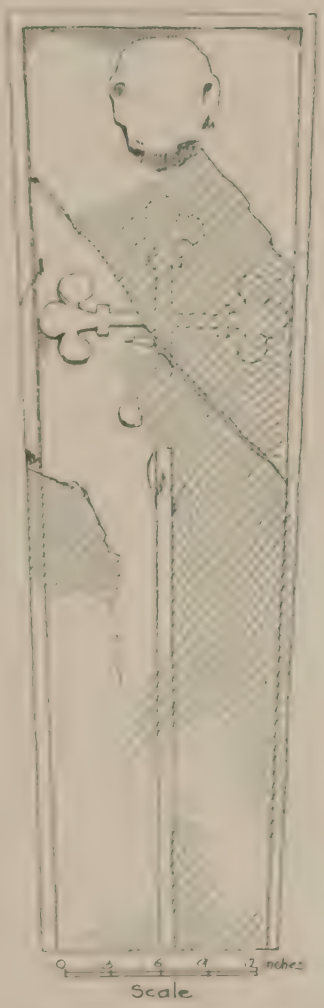

Fig. 5. Grave-slab of abbot (? David) in north transept floor.

In 1286 Abbot John de Marina was buried in the chapter-house, where other abbots were buried; their coffins were found early in the last century, when the floor was taken up.

At the end of the first period, therefore, we have a Norman church with Early English additions and a Norman monastery on the south with some minor alterations. What was possibly the entrance to the frater, now in the south-west angle of the cloister, is the only trace of work of Early English date we have in the monastic buildings.

[1] Smythe, *Lives of the Berkeleys*, i. 98. [2] *Ibid.*, p. 98. [3] *Ibid.*, p. 98.

Period 2.

In 1298 Edmund Knowle, then probably treasurer of the abbey, began additions to the church which were destined to alter its appearance completely. 'He laid the foundations of the new church with the vestry', and 'began that great work on the sixth day after the Assumption of our Lady (Aug. 21st) the hour of nine, the year of our Lord 1298, the xxv year also of King Edward I'.[1] The thoroughness with which this work was done is proved by the fact that, with but little, if any, alteration, it stands to-day as Knowle and his successors built it.

The new scheme, as can be seen by the plan, was to rebuild the eastern arm on a much larger scale. The new quire and presbytery were of five bays with aisles, and east of this was a lady chapel of two bays. The total length is 143 ft. from the crossing, the width across the quire and aisles 69 ft., and across the lady chapel 30 ft. 6 in. On the south side of the presbytery is the vestry (now called the Berkeley chapel) with a curious and interesting vestibule. The plan adopted by Knowle enabled him to build a large part of his new work without disturbing the Norman presbytery and high altar; that is, to complete the lady chapel and certainly the easternmost bay of the presbytery, also the vestry and its vestibule. The extra width given to the aisles would almost have enabled him to build the outer wall on the south side, while on the north the new wall was incorporated with the south wall of the Early English lady chapel, since known as the Elder lady chapel. As a record of the progress of the work we have the burial of Lady Joan, wife of Thomas Lord Berkeley, in 1309, in a tomb 'in the arch between the vestry and the south aisle'.[1] Her husband was buried here in 1321.[2] The front of this tomb towards the vestry is a curious piece of design. The upper part is Early English, brought from the earlier church; the lower is contemporary with the burials, and has five shields, the middle one bearing the three lions of England, those at either end Berkeley (one with a label), while the intermediate shields have the arms of Ferrars and de Quincey (fig. 6). Lady Joan Berkeley was daughter of William Ferrars the younger, Earl of Ferrars and Derby, and of Margaret his second wife, eldest daughter and co-heir of Roger de Quincey.

Meanwhile, in 1316, Knowle succeeded to the abbacy, and his predecessor James Barry was buried 'under a marble stone in the south side of the Rood altar, under the arch there'.[3] As Thomas Lord Berkeley had already in 1243 been buried 'under the arch next to the Rood altar', we must assume that this was a raised tomb, as that of Abbot Barry was evidently a grave-slab of Purbeck marble in the pavement south of the rood-altar platform; they would both

[1] Smythe, *Lives of the Berkeleys*, i. 207. [2] *Ibid.*, p. 220. [3] Newland's Chronicle.

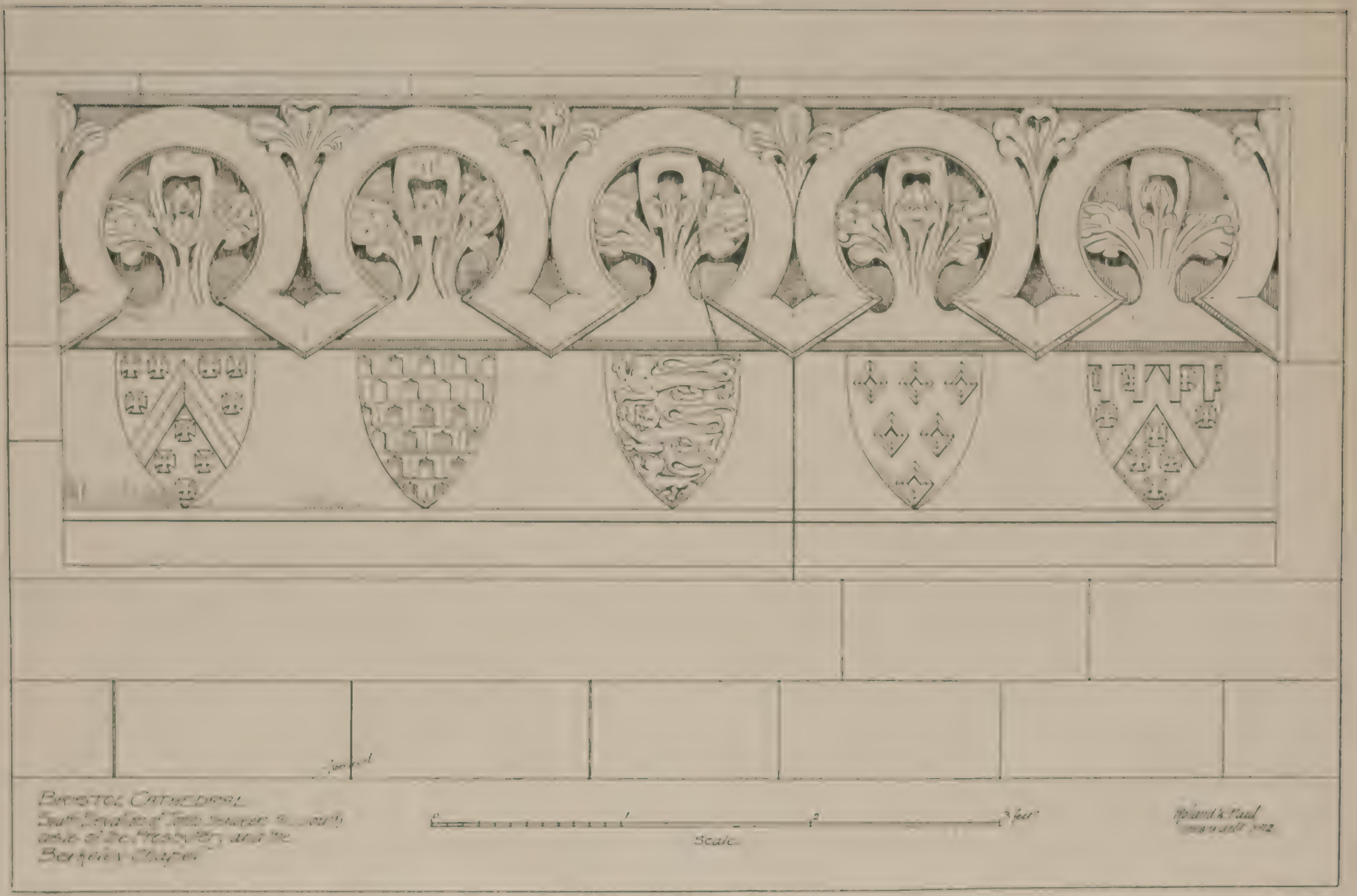

Fig. 6. Tomb of Lady Joan Berkeley.

be practically 'under the arch' of the arcade, which is doubtless the arch referred to.

In 1326 Maurice (3rd) de Berkeley was buried 'in the south aisle under the arch before the quire door'.[1] This alludes no doubt to the westernmost of the recesses in the south aisle, which was opposite one of the upper entrances to the quire.

Abbot Knowle, during whose time the number of canons had been increased from six to fourteen, died in 1332, and he is 'buried under a broad marble stone straight before the Rood Altar'.[2] This is good evidence that his work in the quire was not sufficiently advanced for him to be buried there.

During the abbacy of his successor, Abbot Snow, who is generally credited with having continued and perhaps completed the new quire, Lady Margaret Berkeley was buried in 1337 'in the great tomb under the arch between the Elder Chapel of Our Lady and the north aisle there',[3] showing that by that date the new north aisle was complete. And Maurice (4th) Lord Berkeley, her son, who died June 8, 1368, at Berkeley Castle, was buried by the side of his mother 'in the same great tomb'.[4]

Abbot John Snow died in 1341 and 'is buried under a broad marble stone at the entrance to the Rood altar'.[5] I take this to mean that he was buried westward of Knowle. We thus have proof that even at Snow's death the new quire was not sufficiently complete for burials. Possibly also, as he had been so closely associated with Knowle, he had expressed a desire to be buried near him.

However, the next abbot, Ralph of Ashe, who died in 1353, 'lieth buried in the middle of the quire within the Gryce afore the youngest Novices stalls'.[6] The quire was evidently by now complete with its fittings, at a date 55 years after Knowle began the work. There is, I believe, no record of the consecration of the new quire, but we find that entries of burials subsequent to this date refer to places near the new high altar. In 1366 William Coke, the sub-prior, is 'buried in the space afore the door, entering into our Lady Chapel above the High Altar'.[7]

Of the next two abbots, Henry Shellingford, who died Sept. 2, 1338, 'lieth buried in the Nether tomb of the Presbytery, which he had caused to be made before the High Altar', and John Cerney, died Oct. 5, 1393, 'lieth buried in the over tomb of the aforesaid Presbytery'.[8] These would be on the north side, as the sedilia would occupy the 'over' position on the south side. We have no record of any burial in the 'nether' position on the south side. Then we have another burial in the nave, 'Abbot John Daubenay dies in 1428', and 'lieth buried in the High Tomb on the North side of the Rood altar'.[9] At this time the

[1] Smythe, *Lives of the Berkeleys*, i. 273.
[2] Newland's Chronicle.
[3] Smythe, *op. cit.*, i. 345.
[4] *Ibid.*, p. 377.
[5] Newland's Chronicle.
[6] *Ibid.*
[7] *Ibid.*
[8] *Ibid.*
[9] *Ibid.*

interior seems to have been greatly interfered with by further new work. During the next fifty years, from 1428, when Walter Newbury became abbot, to the death of William Hunt (his successor) in 1481, the central Norman tower seems to have been removed, and a new central tower erected either on new piers or on the old Norman piers encased or cut down. The late Mr. E. W. Godwin thought that the Norman piers were cut down to their present form. Having regard to the construction of the average Norman pier this process would seem to be a distinctly dangerous one. The late Mr. G. E. Street, on the other hand, was of opinion that the piers had been entirely rebuilt. They were extensively repaired in 1860, and all that is now visible, although doubtless a true copy of the old, is therefore modern.

The work, however, of rebuilding the central tower would have been quite sufficient to interfere with the position of the pulpitum and quire stalls near the eastern arch of the crossing; and we find that both Abbots Newbury and Hunt were buried on the north side of Knowle's lady chapel, in the recesses that had been designed by Knowle for tombs. Abbot Walter Newbury was 'buried in the over arch of the Lady Chapel on the north side of the altar' in 1473, and Abbot William Hunt 'on the north side of our Lady Chapel in the Nether arch by the quire there' in 1481.

The church now consisted of a Norman nave and transepts, the Early English Elder lady chapel, a Decorated quire presbytery and lady chapel, and a new Perpendicular central tower. The quire stalls would be in the first bay of the new quire with upper entrances in the second bay, tombs and sedilia in the third and fourth bays, with the high altar and reredos at the east end of the latter; the fifth bay is a procession path, with the aisleless lady chapel of two bays beyond. By this date also most of the important places before the rood altar were also occupied by tombs of abbots and members of the Berkeley family.

The Monastic Buildings.

During this second period little appears to have been done to the monastic buildings. In 1349 the plague visited the city, and the monastery lost many of its inmates; this and the cost of the extensive works in the church during a long period probably did not leave much for any alterations or additions to the monastery.

We find in Newland's Chronicle, however, that Abbot Knowle erected 'also the King's Hall and King's Chamber' and 'repaired and covered the Frater'. The building now the deanery is the only one now existing that has any traces of fourteenth-century work; the west wall of the cloister may be partly of this date, although it has been extensively repaired, and possibly a corner of

the cellarium. At this time the cloister court was evidently enlarged on the west side by an additional ten feet, the old Norman outer wall being utilized for the new arcade. We have probably Knowle's 'King's Hall' in the present deanery, but it has undergone much alteration in Perpendicular and post-Reformation times. It is an oblong building 65 ft. from north to south, 29 ft. from east to west, and its east wall would be in line with the west wall of the fourteenth-century cellarium. The Norman staircase already mentioned at the north end of the cellarium seems to have been retained and incorporated in the later work.

In the basement of the deanery is a fourteenth-century doorway, and on the first floor is a doorway which is distinctly Knowle's work. This building was until about twenty years ago divided into two houses, and the numerous cross walls inside effectually hide the mediaeval arrangement.

Period 3.

Abbot Newland or Nailheart succeeded in 1481, and the work of this abbot and his successor Robert Elyot (1515–1526) must have made as considerable a change in the appearance of the monastic buildings as that of Knowle and Snow had made in that of the church.

We have in an addition to Newland's Chronicle interesting particulars of some of the works partially or completely carried out by Newland.

'This Reverend Father Abbot John Newland did many honourable deeds in his time. . . . He laid the foundation of the body of the church as high as the cills of the windows on the north side and the west end, with other houses of office and many other great benefits for which God reward him with eternal bliss, Amen. Also the Reverend Father in his time builded the dorter and frater, the Priors Lodgings, the Gatehouse, the Almonry with the lodgings next adjoining, the hay-barn and the stables. . . . He ruled the Abbey honourably 34 years and died the 2nd. of June 1515 . . . and is buried in the south side of our Lady chapel in the arch there by the door going into the loft going into the organs.'

There is no record of the place of burial of Abbot Elyot.

When the ground was lowered in 1866 for making the new road, the foundations of Newland's proposed nave were exposed. Its dimensions and some particulars of the remains of the Norman nave that were found also were given in Mr. G. E. Street's report in 1867, and these details have made it possible for the main lines to be placed on the plan.

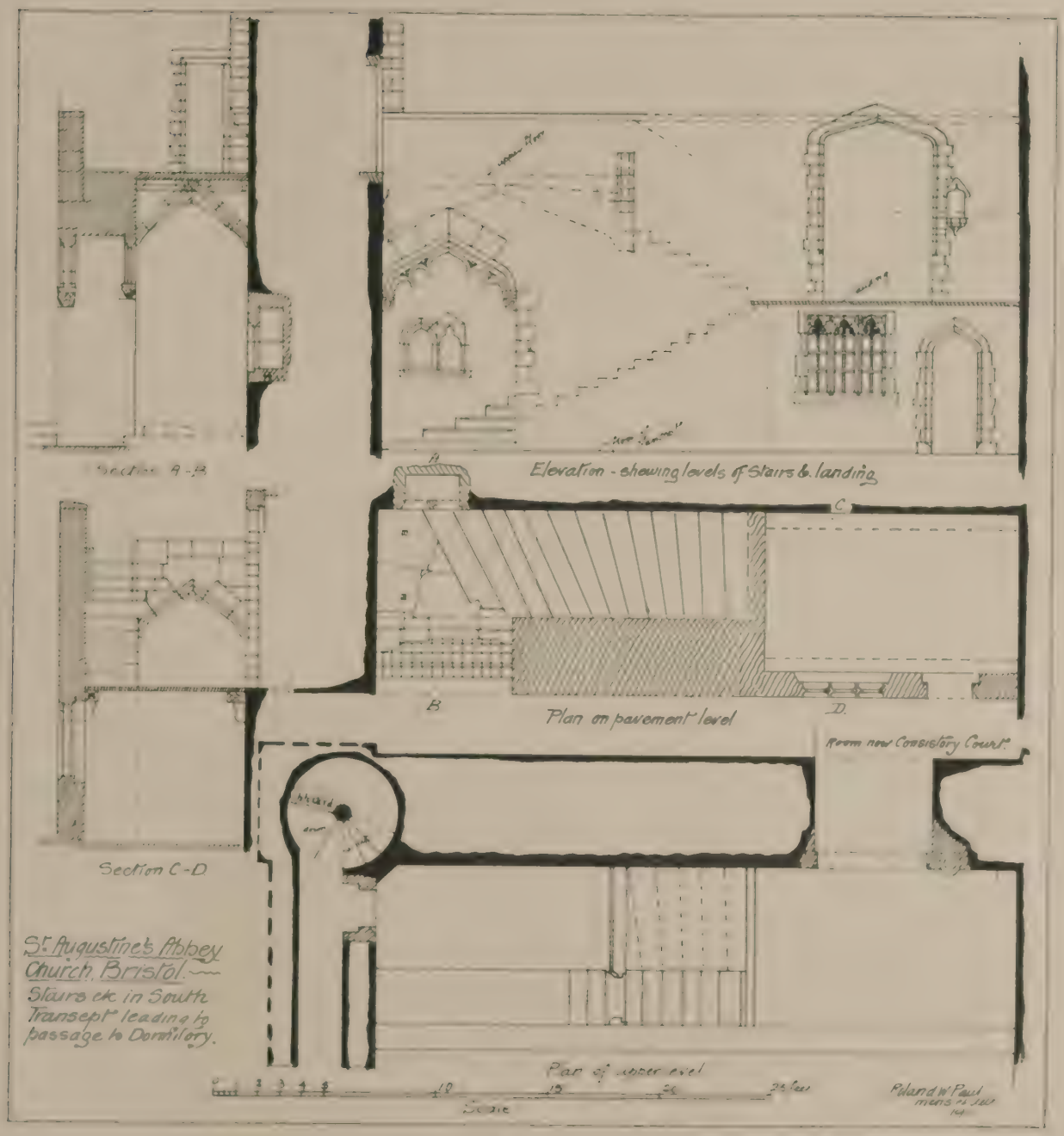
Section A-B
Elevation - shewing levels of Stairs & landing
Plan on pavement level
Room now Consistory Court
Section C-D
St. Augustine's Abbey Church, Bristol.
Stairs etc. in South Transept leading to passage to Dormitory.
Plan of upper level
Scale
Roland W. Paul

FIG. 7.

The new nave was to have been 100 ft. long, with a width corresponding to that of Knowle's quire, divided into six bays, and with buttresses of the same great projection as in the fourteenth-century work. The new nave was in fact to be built round, and supersede, the Norman nave, as had been done in the case of the quire and presbytery.

The only other work in the cathedral that is undoubtedly Abbot Newland's is the staircase in the south transept leading to the passage to the dorter. There are evidences of earlier work re-used, and the altar at the south-east angle must at this time have been removed. The curious straight-sided form of arch used here is proof, I think, that it is Newland's work (fig. 7).

The staircase itself is interesting. There is a landing for the door to the dorter passage, and a further flight of steps leads to an upper floor, and, by a staircase in the south-east angle of the transept, to a well-guarded room over the transept chapel (now the Newton chapel), generally considered to have been the treasury.[1]

This staircase is Norman to the line of the Norman parapet, and with the exception of the staircase in the north aisle leading to the galleries round the quire and lady chapel, and a small stair in the south-west angle of the Berkeley chapel, is the only staircase in this part of the building. There was no doubt a corresponding staircase in the north-east angle of the transept, cut away when the Elder lady chapel was built in the thirteenth century, on the east side of the north transept.

The Monastic Buildings.

The south wall of the Norman cloister appears to have been removed, and a new wall built rather over 10 ft. further south, in the same way as the west wall had been treated. A new frater was built, 55 ft. long and 28 ft. wide, the walls carried down to the lower level, with at least two and possibly three sub-vaults, the windows of the frater itself clearing the cloister roof on the north. There were similar windows on the south. There is a circular staircase in the south-east angle now blocked, evidently incorporating Norman work.

On the west side of the cloister considerable alterations were made to the King's Hall. The southern half of the east front and the whole of the south front were altered, and perhaps raised and covered with a low pitched roof. There was apparently a stair-turret in the south-west angle. To the east was an open court with a pentice against the south wall. To the south was a smaller court and passage, on the lower level, and on the south of this a group of buildings

[1] See paper by the late R. Hall Warren, F.S.A., on 'The Treasury of the Abbey of St. Augustine, Bristol', *Proceedings Clifton Antiquarian Club*, vi. 128.

that I suggest was the abbot's lodgings. Newland's rebus, a heart pierced by nails, is repeated twice, on an addition to the Norman outer doorway of the gate-house, and again over a doorway between the court and passage eastward, also on the gate-house and on a shield held by two angels at the feet of his effigy in the lady chapel.

The building called the abbot's lodgings has been much altered in post-Reformation times, but many of its walls and windows are of this date, and on its east side is a room, on the ground floor, 14 ft. by 8 ft., with hatches on the east and north sides and a long stone bench on the same level as the cills of the hatches, running the whole length against the south wall. North of this room, across a passage and on an upper floor, is another small hatch.

The site of the monastic kitchen could not have been very far from this point, and probably stood in the space between the room just described and the south-west angle of the frater.[1] Eastward again, and due south of the frater, was the lesser cloister. Of this a fragment of the north walk remains. It appears to have been about 70 ft. square. The infirmary may have been either east of this cloister or on the south side, as at Llanthony. The former position is now occupied by the ruins of the bishop's palace (burnt in the riots of 1831). The new road passes along the south side of this cloister, and I know of no foundations having been discovered at the time of its making except those of the south front of the palace, so that the position on the east side may in this case be the correct one.

The great gate-house, standing about 100 ft. west of the church, was the centre of another group of buildings, also of Newland's and Elyot's date. The arms of both these abbots appear on the gate-house.

Immediately west of the gate-house was a building 60 ft. long and 25 ft. wide, doubtless including the porter's lodge and almonry. North of this was a building which, from an old plan, appears to have been partly mediaeval, altered in later times, and for some years used as the deanery.[2] It was taken down when the new road was made on the north side.

Between the gate-house and the church was a large group of buildings. One was known as the Minster House. From old engravings they all appear to have been of sixteenth-century date, and were pulled down a few years ago for no other object apparently than to lay out the space between the west end of the church and the gate-house as a lawn.

[1] Comp. Durham.

[2] I am able to add a plan of this building and that of the Minster House so called, from plans in the possession of the Dean and Chapter of Bristol.

Period 4.

There are now no further additions to the plan. The Dissolution came in 1539, and for some time previously the monastic funds were low in spite of generous gifts by the Berkeley family. A late doorway with arms in the spandrels is attributed to Abbot Somerset (1526–1533), and a rich cresting was placed by Abbot Burton over Knowle's reredos. The Norman nave by this time was very ruinous, and it was condemned by the king's commissioners and pulled down. In course of years the foundations became covered up, and the site was divided up into gardens.

We are left in doubt as to the actual state of the interior at this time. Abbot Elyot appears to have provided quire-stalls, and one of the existing bench ends bears his arms. The pulpitum must have been destroyed, for Thomas White, a merchant of Bristol, purchased a stone screen or pulpitum which formerly stood in the church of the White Friars, and bequeathed it by will to 'his Cathedral Church'.[1] His will was made in 1542, the year of the foundation of the bishopric.

This screen was placed across the quire at the second bay eastward of the crossing. The quire stalls were placed east of this, and the high altar was removed to the east end of the lady chapel. A stone pulpit was erected against the first pier on the north side outside the screen, and the dean and prebendaries had seats here, and passed out through the screen for the sermon.[2]

This arrangement is shown on Browne Willis's plan dated 1742. By Britton's time the pews had been removed, and it appears to have so remained until 1860, when very drastic measures were taken by the then dean (Dean Elliot) for the purpose of bringing the ritual quire back approximately to its mediaeval position and appearance. The beautiful quire screen presented in 1542 by White was taken down and a large part of it broken up, and also the fittings, with the exception of some of Elyot's stall-work, which was incorporated with the new work.

In 1868 the foundation-stone of the new nave was laid, and the nave was opened for divine service in 1888. The central tower, north transept, and abbey gateway have been considerably restored, and the quire has now been

[1] See paper by the late Robert Hall Warren, F.S.A., on 'The Choir Screen of Bristol Cathedral', *Proceedings Clifton Antiquarian Club*, vi. 6.

[2] An interesting drawing, showing this pulpitum, the wooden screen across the north aisle, and the stairs to the pulpit, is in the Braickenridge Collection (no. 48), now at the Art Gallery, Bristol. In this collection are many other very valuable drawings showing buildings now destroyed.

brought back to where it was at the Suppression, immediately east of the crossing, and the high altar and reredos have been re-erected on the old site as planned by Abbot Knowle.

Much of course of value has been lost during all these changes. Some interesting remains of the organ screen of 1542 have been rescued and built into the side screens of the presbytery, and brighter days seem to have dawned for the welfare of the cathedral church as it now is, and for the proper preservation of the many points of interest it still contains.

The monastic buildings were converted for the most part into prebendal houses; the chapter-house was fortunately preserved and the north and east walks of the cloister. The former was taken down when the new nave was built, but portions of it have since been built in between the new buttresses. A great deal of interest no doubt remains hidden under plaster, wall-papers, and partitions in the houses now standing south and west of the cloister; enough, however, remains visible to enable us to reconstruct on the plan a great deal of the group of buildings that once formed the monastery. And in the future, with the aid of the complete plan now published, it will be possible to identify with greater accuracy any buildings or portions thereof that may from time to time come to light.

A few notes should be added describing the pavement of the church. That of the nave and its aisles is modern. That of the crossing is of black and white marble squares of post-Reformation date, and, with the exception of the slab with cross and head already described and figured (fig. 5), the pavement of the transepts is of late date, with grave-slabs of the seventeenth and eighteenth centuries. This also applies to the aisles of the quire and presbytery, although there are some fragments of early tiles inserted in the paving near the columns flanking the reredos. A few tiles are to be found also on the altar platform at the east end of the north aisle, including examples of tiles with green glaze and embossed patterns—a rose, a marigold, a swan, and one or two other patterns—perhaps of fifteenth-century date. They should be compared with examples of earlier date at St. Albans Abbey and Abbey Dore. Heraldic tiles of fourteenth-century date have quite recently (July, 1912) been discovered under the modern tiling in the lady chapel, including the arms of Berkeley, Mortimer, Fitzwarren, paly of six within a bordure bezantée, and what appears to have been a cross fretty between four mullets. Others of later date have the arms of Abbot Elyot,

and the rebus of Abbot Newland. In the floor of the lady chapel, near Bishop Paul Bush's tomb, is a Purbeck slab with the matrix of the brass of an ecclesiastic under a triple canopy of late fifteenth-century date. This slab was removed to its present position from the south side of the presbytery when the modern sedilia with fragments of the organ screen were erected under the arch south of the high altar. In the Newton chapel are portions of a slab with an incised cross of the fourteenth century. The paving of the quire and presbytery is of marble and modern (1895). That of the cloister has no features of interest, and a wood-block floor has taken the place of the stone paving in the chapter-house.

DATES.

- 12th Century.
- 12th Century Work C (see Britton's Plan). Do. do. D (see Godwin's Plan).
- Conjectural Walls of Norman Church and Monastic Buildings.
- 13th Century
- 14th Century
- 15th Century
- 16th Century

  Wall of Buildings now destroyed or conjectural, shewn by lighter tint and dotted lines.
- Post-Suppression.
- Uncertain date
- Modern

THE CHURCH AND MONASTERY OF ST AUGUSTINE, BRISTOL

(NOW THE CATHEDRAL OF THE HOLY TRINITY).

GROUND PLAN

SHEWING THE EXISTING BUILDINGS AND SOME NOW DESTROYED.

SCALE.

0 5 10 20 30 40 50 60 70 80 90 100 Feet

Roland W. Paul F.S.A. mens. et delt. 1911-12.

G. P. BELL & SON, 47 & 48 FOUNTAIN STREET, WESTMINSTER.

Published by the Society of Antiquaries of London, 1912

A SILVER SASSANIAN BOWL ½

Published by the Society of Antiquaries of London, 1912

XI.—*On a Silver Sassanian Bowl of about the year* 400 A.D., *found in the NW. Provinces of India. By* Sir CHARLES HERCULES READ, *LL.D., President.*

Read 20th June, 1912.

THE bowl I have the honour to lay before the Society was sent to me by an Indian correspondent, and I made up my mind at once that it should be secured for the British Museum. On my showing it to my friend Mr. Max Bonn, he was kind enough to offer to present it, and at this moment it is in process of being laid before the Trustees as a gift, through the intermediation of the National Art Collections Fund (pl. XXXV).

My correspondent's story is that during a flood on the Swat River part of the bank was washed away, and that this bowl was discovered in the ground thus exposed. Local tradition associates the spot with the palace of an Indian monarch of six thousand years ago. That may have some foundation, but there can be little doubt that so remote a date has nothing to do with the object before us.

It is a stout bowl, somewhat less than a hemisphere in shape, the metal being about $\frac{1}{4}$ inch thick, plain on the inside, and on the outside having subjects in relief, the whole apparently cast and chased.[1] It weighs 20 oz. 190 gr. Troy, is $6\frac{3}{4}$ in. (168 mm.) in diameter, and $2\frac{1}{4}$ in. (57 mm.) high. It bears traces of having been coated with a black varnish, which still remains on many of the sunk parts of the design. This design is concentric from the base. In the centre is a medallion with a bust of a young man to the left, with short curly hair and clean-shaven face, wearing a plain garment cut somewhat low at the throat; below the bust, but still within the encircling ring, are two formal leaves, presenting the appearance of a pair of wings. Beyond this medallion is a broad border, filled with a much tortured foliate design, which upon examination is seen to consist of three birds, phoenixes, peacocks, or the like, the only portions of which that retain any resemblance to the animal world being the heads and necks. To these I shall return later. Beyond again, on the side of the bowl, is the main subject of the decoration of the vessel. This consists of a hunting scene, in which

[1] This is the opinion of a practical silversmith, Mr. Southwick of the firm of Tiffany & Co., to whom I chanced to show it; but I myself feel by no means sure that it has not been made by hammering. Certain dendritic cracks support this theory.

four horsemen are engaged in the chase respectively of the boar, lions, ibex, and tigers. Above this, on the extreme edge of the bowl, is a narrow border, consisting of a wavy line with a formal leaf in each wave.

To any one familiar with the admirable work of Smirnoff[1] or the collections in St. Petersburg, it is very clear that we have here the feats of a monarch of the great Sassanian line which competed with Rome for her eastern dominions for some hundreds of years, and often with success. Though Persia had been permeated with the arts, literature, and beliefs of the Greeks up to the time of the great Sassanian monarch Artaxerxes (Ardeshir), his successes in the field enabled him to follow his own inclinations and cast off the European tradition in all these directions, and henceforward the religion and arts of the Sassanian kingdom bore the impress of native talent. Thus we find in the productions of the time when the dynasty was most flourishing a style unmistakable in its orientalism, but still with an ineradicable suggestion of the arts of Greece. While this is in general true, at any rate of the more portable remains of Sassanian craftsmanship, the stock of such remains is hardly large enough to enable us to determine, on the evidence of the objects themselves, to what reign they belong. The evidence provided by the coins is in this respect of some help, for it shows that each succeeding king could be distinguished by the style of his royal head-dress. In the present case the royal diadem resembles most nearly that of King Bahram IV (Varanes, A.D. 380–404).

From long use the surface of the reliefs has been a good deal rubbed, and much of the detail is obliterated, though the general features are clear enough. The king (pl. XXXVI, fig. 1) is riding a horse proceeding to the right; his crown is formed of a crescent within which is a sphere, and on either side a horn-like projection; in the one ear visible is a pendent ornament. He holds a spear, with which he is transfixing the head of a boar approaching him beneath the belly of the horse, and of nearly the same size as the latter. The king wears a tightly fitting coat[2] confined by a girdle, and with sleeves, and reaching nearly to his knees, where it is looser and is shown in elegant curves behind him; on the shoulders and probably elsewhere are circular ornaments; his boots reach nearly to the knee, and, like the other figures on the bowl, he is unprovided with stirrups. The horse has a plume on its forehead, a headstall of a simple type, with the reins lying on its neck, and its mane is hogged; the saddle-cloth is quadrangular, much like that of the Household Cavalry, and has a fringe of dots and circles; from it float two pointed pear-shaped objects that in different shapes seem charac-

[1] *Oriental Silver: Atlas of ancient silver and gold vessels of oriental origin principally found in the Russian Empire.* St. Petersburg, 1909. Published by the Imperial Archaeological Commission. (Text in Russian.)

[2] This garment appears to be identical with that worn by Khusrū Parvīz in the Ajanta painting described and figured by V. A. Smith, *A History of Fine Art in India*, p. 291 (see pl. xxxviii, fig. 2).

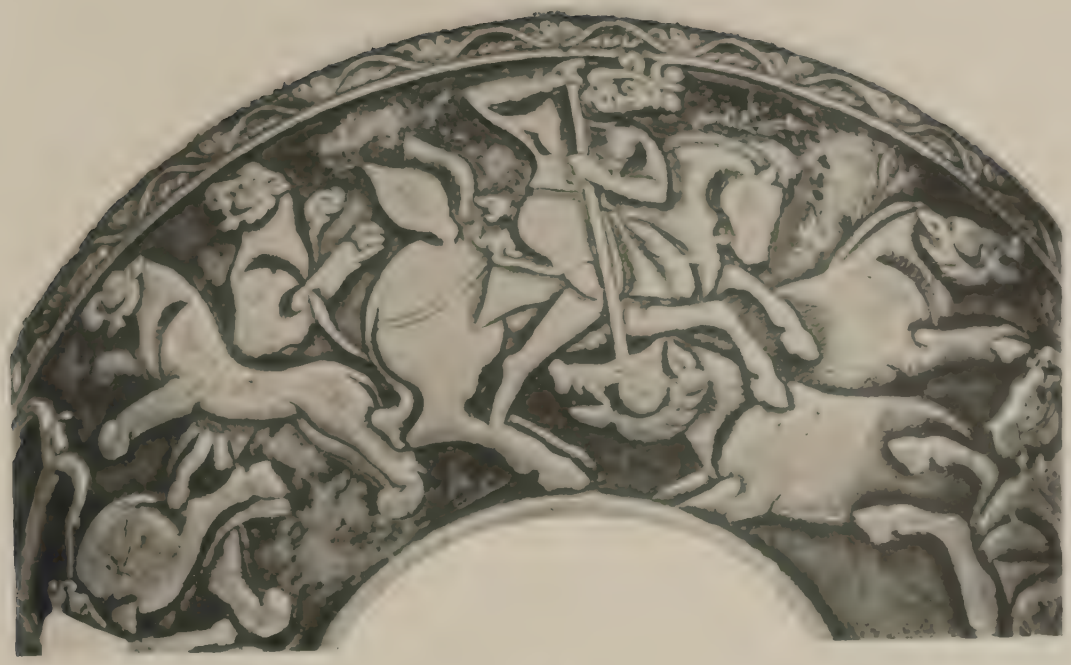

Fig. 1

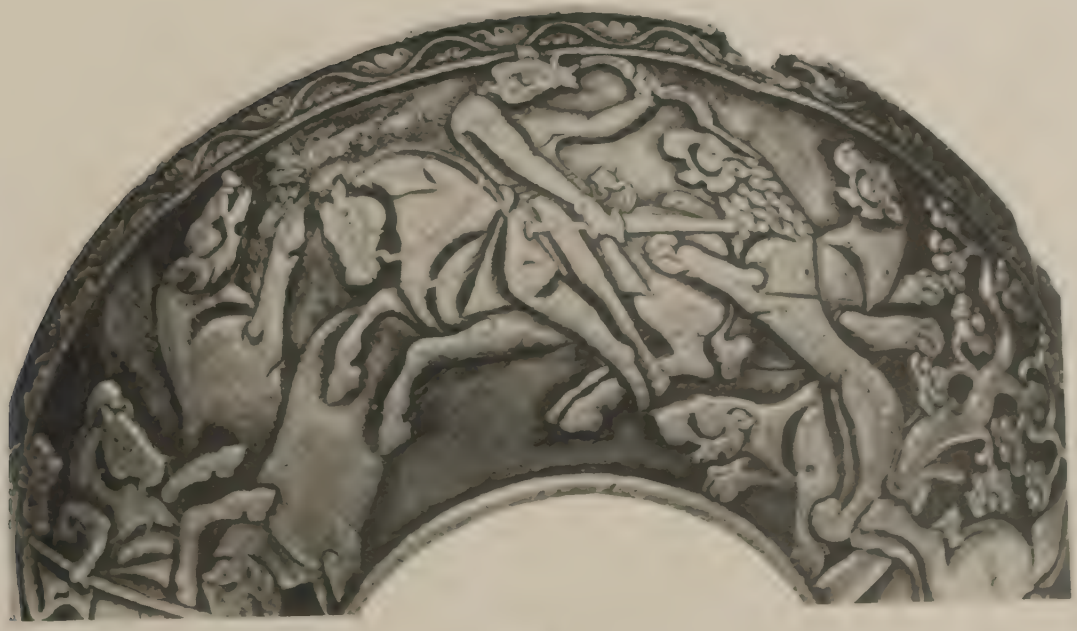

Fig. 2

A SILVER SASSANIAN BOWL

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teristic of the Sassanian nobles. The treatment of their surfaces with engraved wavy lines suggests a fur-like material, but they appear to be light in weight, as they are generally represented as floating in the air like balloons attached to lines fastened apparently to the saddle-cloth. In the present example they are edged with engraved lines suggesting a heavy fringe.[1] The end of the horse's tail is tied in a knot. Behind the boar which the king is spearing is another galloping off in the opposite direction, and in the background over his shoulder is engraved a growing plant. The second horseman (pl. XXXVI, fig. 2) is riding in the opposite direction, and to judge by his head-dress should be a personage of some rank; he has a crescent over his forehead, but without the royal sphere, and with projections on either side, while something like the end of a scarf of apparently a diaphanous material floats behind his head; in all other respects his attire is the same as that of the king, and his horse has similar trappings (though the floating ornaments on the crupper are absent) except that a part of the mane is carefully cut to hang down on one side of the neck. The rider is attacking a lion and two lionesses: one of the latter is galloping away; the second, apparently wounded, seems falling to the ground. The lion, which is provided with a sturdy mane, is attacking the horseman, with its fore-paws on the horse's haunches, while the rider, turning in his seat, transfixes the animal's throat with his sword, and raises his left arm aloft, holding a bow in the hand. The features worthy of remark here are the two weapons carried by the huntsman. The sword has a long straight blade, narrowing gradually to the point, a short guard, nearly straight, and a very long and thin hilt terminating in a T-shaped pommel. It would seem that it was intended for use as a two-handed sword, as the long grip would be useless and even awkward in one hand, for it may be noticed that the horseman, in order to get the balance of the weapon, is obliged to grasp it quite close to the guard, thus leaving the greater part of the hilt projecting uselessly and even dangerously behind his hand. The scabbard hangs rigidly along the line of his left leg; it has remains of elaborate ornament, and a chape of an angular form. The bow that the rider holds aloft in his left hand is no less remarkable as a weapon. From its form and from the shape it assumes when drawn (as seen in the succeeding figures on the bowl) this is undoubtedly what is known as a 'composite' bow. This bow, as its name implies, is constructed of a number of materials of opposite qualities, wood, horn, sinew, etc., the effect of the combination being to attain the greatest strength and at the same time the highest tensile and elastic quality. No doubt the composite make of the weapon is intended to be indicated by the parallel curves of the arches on either side of the grip. In the figure next following the rider is drawing his bow, and

[1] For a discussion of the purpose and construction of these curious objects, see Dalton, *Treasure of the Oxus*, p. 122. Cf. also figure of prince in pl. xxxviii, fig. 2.

it will be observed that while the left arm, grasping the bow, is stretched at full length, the right hand, about to release the arrow, is considerably behind his ear. If the actual power of the weapon be at all in relation to its tensile properties it would be formidable in competent hands.[1]

Following this figure and separating it from the next is a flowering tree, a masterpiece of artistic formalism. Each flower has six petals around a centre.

The third figure (pl. XXXVII, fig. 1) shows a horseman riding to the right, armed only with a bow, and chasing three ibex, one of which is falling on his chest, while the other two are escaping, one having an arrow buried in his neck up to the feathers. The rider wears a pointed cap of fur, cut so as to cover the hair, and has an ornament in his ear; by his right leg hangs a bow-case or quiver with straight sides, ornamented with diagonal bands of a kind of herring-bone pattern. His horse has the balloon-like appendages, similar to those of the king; in other respects his costume calls for no remark, except that from his foot floats a similar object to that behind the head of the last figure. Beneath the horse is a growing plant represented by three curved lines, each having a trefoil flower indicated by

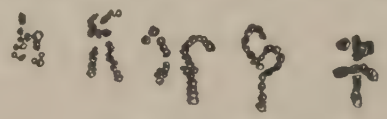

Fig. 1. Inscription on Sassanian bowl. $\frac{2}{1}$.

a dot and circle. Before passing to the next figure, I cannot resist calling attention to the thoroughly sympathetic treatment that the artist has bestowed on the figures of the ibex, an animal that must have been very familiar to him, or he could hardly have handled it with so complete an understanding.

The fourth figure (pl. XXXVII, fig. 2) shows a horseman riding to the left and turning in his seat to deliver an arrow at a tiger who rears behind his horse, and forms a kind of cross with a second tiger rearing in the other direction.[2] The huntsman appears to be bareheaded, with short wavy hair, and with an ear ornament; at his side hangs a sword in its sheath, similar to the weapon wielded by figure no. 2; from his foot floats the same appendage as is seen on the last figure; in all other respects he is similarly attired to the others. In the field on either side of his head are five characters, formed of punched dots, a method of placing inscriptions on this class of object usual among the Persians at this time (e.g. Smirnoff, nos. 60, 61, 62).

[1] Composite bows are commonly found in Sassanian hunting scenes: see Smirnoff, *passim*. For the distribution and construction of the weapon see Henry Balfour in *Journ. Anthrop. Inst.*, xix (1890), p. 220.

[2] This arrangement of lions or other animals, rearing up and forming a kind of St. Andrew's cross, is a characteristic feature of Sassanian hunting scenes; e.g. silver ewer in the Bibliothèque Nationale, Smirnoff, no. 85, pl. li.

Fig. 1

Fig. 2

A SILVER SASSANIAN BOWL

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Fig. 1. Ajanta cave fresco—to show the birds ending in foliage (after Griffiths)

Fig. 2. Persian noble (Khusrū Parvīz) and lady: Ajanta Cave I (after Griffiths)

Bowls of this shape and general type are not uncommon compared with other vessels; three examples very similar to the one now before us are given by Smirnoff (nos. 67, 283, 284). One of them, no. 283, has a head in the middle of the bottom. Another, in the Franks Bequest in the British Museum, has decorations consisting entirely of busts in circles,[1] though they are rather oriental than classical in style. A feature that is helpful, however, is that this Franks bowl has the field between the medallions filled with floral scroll-work that strongly recalls the paintings in the Ajanta Cave no. 1, as Mr. Dalton points out. This cave is dated by Mr. Vincent Smith between A.D. 500 and 642,[2] and contains among other subjects a number of representations of Persians. The best known is perhaps the group thought to represent Khusru Parviz, with a lady and attendants, where the king drinks from a bowl not unlike in size to the type now in question, though more conical in outline (pl. XXXVIII, fig. 2). A further link with the Ajanta paintings is found in the floral phoenixes that surround the bust on our bowl. Exuberant foliage is a common decorative feature in the Ajanta paintings, suggesting a connexion with the Buddhist art of Ceylon, which provides abundant material in this direction. The admirable reproductions of the Ajanta caves published by Mr. Griffiths under the auspices of the India Office[3] furnish the student with all that is needful for the study of their art; though copies of certain of the paintings, which successive conflagrations have spared, are still to be seen at the Victoria and Albert Museum.

In Mr. Griffiths's second volume, pl. 121, will be seen a bird of the involved foliate type that must be intimately related to those on our bowl, and tends to show that the Persian visits to the Deccan princes were not without their effect on the native art—or possibly the converse was really the case (pl. XXXVIII, fig. 1). That this particular decorative treatment took hold in Persia is fairly certain, for in mediaeval times it is commonly found on the country's ceramic productions, and thence journeyed to China, where as the phoenix it is firmly rooted to this day. It is interesting to note that when the Chinese, as the masters of porcelain making, came to the help of the Persians in much later times, they sent them also their foliate bird as a decorative detail on the pottery that served them for models.

I consider myself fortunate in having been able to add within so short a period a second of these bowls to the fine nucleus that the museum owes to my predecessor, Sir A. Wollaston Franks. Our series of Sassanian silver plate is now by no means negligible. It is somewhat disappointing that the evidence

[1] Dalton, *Treasure of the Oxus*, pl. xxvii.

[2] V. A. Smith, *A History of Fine Art in India and Ceylon*, p. 275.

[3] J. Griffiths, *The Paintings in the Buddhist Cave Temples of Ajanta*, 1896, ii pl. 104 *d*; 107 *a*, 74; 121, etc.

for precise dating is not quite conclusive, but these difficulties will disappear when more material is available for study. In the meanwhile the most useful service that one can render is to publish every piece with all promptitude, and to place what we have within the reach of all students.

It seems likely, both from the amount of wear that the surface of the bowl shows, as well as from its simple form, that it was intended to be taken from place to place for the king's use, doubtless on such occasions as the hunting expedition it illustrates. A drinking vessel for use in the palace would be more convenient when provided with a foot. As an illustration of the means by which it was no doubt carried about, I give here a figure (fig. 2) of the case of a similar drinking bowl brought from Fergana. This is of cloth covered with leather, fastened with thongs of leather, and there is no reason to doubt that similarly shaped bowls have been carried in similar cases from Sassanian times, and it may well be that the type is even older.

Fig. 2. Case for drinking bowl; from Fergana.

The Inscription.

The punched letters on the edge of the bowl were clearly executed after the rest of the work upon it was completed. How long afterwards is not easy to say. The matter being purely epigraphic, I have thought it best to ask my colleague, Mr. John Allan, of the Department of Coins and Medals, to add a note upon it at the end of my communication.

Mr. Allan says:

'The characters of this inscription belong to the north-western variety of the Brahmi alphabet; it need not have been engraved in India, however, as this alphabet prevailed beyond the Hindu-Kush as far as Kashgaria. Its date is probably 400-450 A.D.; the characters closely resemble those of the Bower MSS., brought from Kashgar in 1890 (cf. Bühler, *Indische Palaeographie*, pl. VI, coll. i-iv). As the characters are formed by dots and not by continuous lines, some of them are rather uncertain; but the most probable reading seems to be *khaṇṭiṇugaka* or *khambhiṇugaka*; the language of the inscription does not seem to be Indian.

No other vessel of this period appears to be known with a Brahmi inscription; Smirnoff only gives inscriptions in various forms of Pahlavi, the language of the Sassanian Empire.'

SITE OF CHRIST'S HOSPITAL, LOOKING EAST, 1907.

FROM A WATER COLOUR BY P. NORMAN.

Published by the Society of Antiquaries of London, 1912.

XII. *Further Discoveries relating to Roman London, 1906–12.* *By* PHILIP NORMAN, *Esq., LL.D., Treasurer, and* FRANCIS W. READER, *Esq.*

Read 20th June, 1912.

INTRODUCTION.

SIX years ago we read a paper before you on 'Recent Discoveries in connexion with Roman London', when you kindly gave us leave to make further researches on behalf of the Society. Since then we have been almost constantly watching excavations in London, and it is now our duty to give an account of Roman remains exposed to view since June, 1906. It will naturally be asked why we have delayed so long: the reply is, that these diggings have followed each other in rapid sequence, lasting in some cases over protracted periods and demanding much sacrifice of time and energy. A large part of our observation also has met with little definite result, while frequently later finds have had a bearing on those which preceded them, and have thus offered opportunities of correcting and amplifying the previous records.

Some of our notes appear at a first glance only of moderate interest, but these are worthy of a place in view of future discoveries, when all may be brought together like fragments of mosaic. Unhappily, so much of the Roman level of London has at different times been destroyed that the possibilities of further evidence are rapidly growing smaller, and the story of Roman London must inevitably remain imperfect. It is the more necessary that every effort should be made to record whatever may yet come to light; we trust therefore that others may be induced to follow up this work and give publicity to their observations, which will thus fit in with the rest.

Our present report, like the last, deals largely with the Roman wall that once encircled the city, long stretches of this having been found and generally destroyed. A bastion of the city wall, which still forms the foundation of the vestry of the church of All Hallows, was being excavated at the time of our last paper. This work was finished with satisfactory results. Since then, at Christ's Hospital, three other bastions came to light, but only one of them, namely, the angle bastion, excavated partly at the expense of the Society, and afterwards preserved by Government, could be adequately examined.

Apart from the Roman wall and the bastions, the great excavation for the extension of the General Post Office, on the site of the larger part of Christ's Hospital, disappointed us somewhat, as before the final removal of the soil to a depth of about 30 ft. there had been much modern rebuilding. It may be added that several early watercourses traversing the site were revealed, which show what great changes have taken place in the surface of this part of London since the beginning of the Roman occupation. Another ancient channel has been noticed, which would have crossed diagonally that mythical stream referred to by Stow as 'Langborne Water'. Detailed description of discoveries relating to medieval London must be reserved for a future occasion.

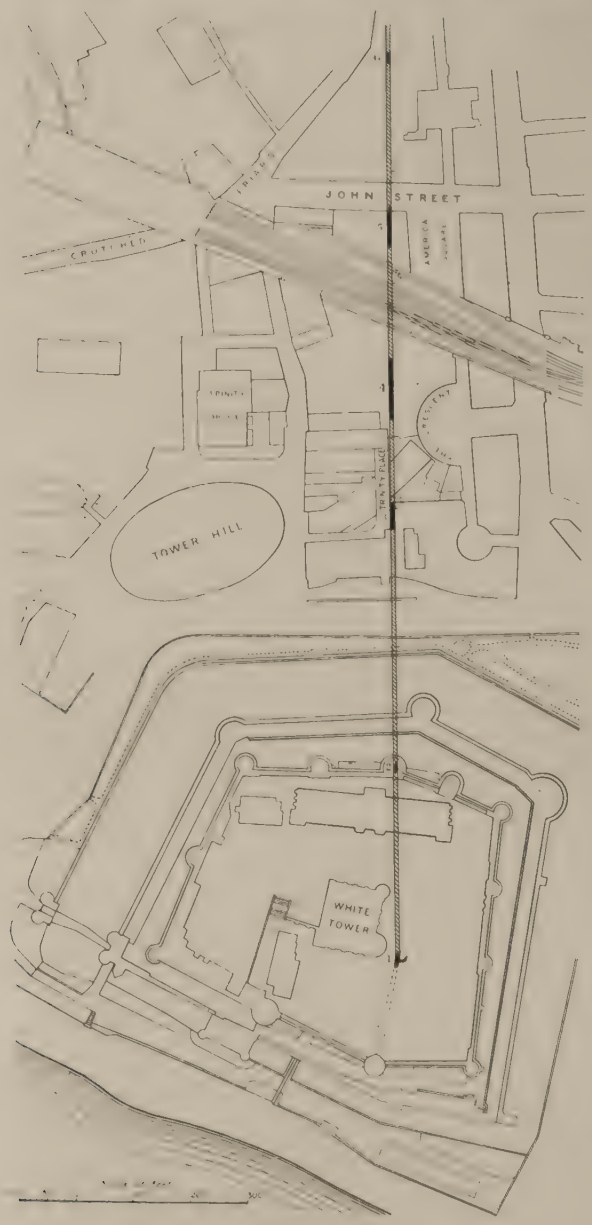


Fig. 1. Plan showing the course of the City Wall from the Tower to Jewry Street.

This paper, at least the earlier part of it, is arranged in the form of an itinerary. We begin by making our way round the wall, from the fragment now visible above ground east of the White Tower or Keep of the Tower of London, first journeying northward and then west. We afterwards travel south and east till we again reach the Tower. As the general mode of construction of the wall is now well known, we will only describe in detail what is abnormal. The portions observed at America Square, Christ's Hospital, and the Old Bailey were all of importance, and further information has been obtained about the very high piece now forming part of the east wall of Messrs. Barber's bonded warehouse and vaults, Cooper's Row, while fresh light will be thrown on the problem of the south or river wall, which has been

1. ROMAN CITY WALL AND REMAINS OF WARDROBE TOWER
EAST OF TOWER KEEP

2. ROMAN CITY WALL AND REMAINS OF WARDROBE TOWER
AS SEEN FROM TOWER KEEP

[illegible]

far less explored than that on the land side, and differs from it in several important characteristics. Other finds of Roman remains in the city are recorded. Finally, we cross the Thames, and say a few words about several discoveries in Southwark.

Remains of the City Wall at the Tower and in its Neighbourhood.

Starting from the fragment of Roman wall involved in the remains of the medieval Wardrobe Tower (no. 1, fig. 1), and a short distance to the east of the southern part of the White Tower, it may be well to say that, whereas elsewhere in London the lower part of the Roman wall is always buried to a considerable depth, here the Roman and present ground levels are almost identical (pl. XL). But this is doubtless because the soil has here been lowered in modern times, as indicated by the height of the plinth of the White Tower above the present ground level. From this point a line to Aldgate, drawn on the map almost due north but slightly inclining to the west, will touch those portions of the wall still existing or the ascertained sites of those destroyed in modern times. The buildings within the Tower precinct are now happily to a large extent in the charge of Mr. Peers. Here, at the beginning of 1911, immediately under the present floor of the Bowyer Tower, when search was being made for a place in which to put heating apparatus, the wall was found, some of the bonding tiles being yellow, as is the case by the Wardrobe Tower. Only a small piece came to light, and that, as far as possible, has been carefully preserved. Its western or inner face is about on a line with the eastern jamb of the entrance doorway; the eastern face was not uncovered. Access can be obtained to it by raising a stone of the modern floor (no. 2, fig. 1).

We will now make our way north of the Tower Ditch. Crossing George Street, no. 6, a projecting house 10 ft. wide, is actually built on the site of the wall, the medieval Postern Gate having been to the south of it. Immediately north, the medieval remains of the wall above ground, visible from the bonded vaults and warehouses, nos. 7 to 12 George Street, and in Trinity Place, Trinity Square, still exist without any change. A short distance farther north we come to Messrs. Barber & Co.'s warehouses on the east side of Cooper's Row. Here is the very large piece of the wall examined by Sir William Tite and Mr. Clifton in 1864, when Messrs. Barber were about to extend their warehouses over the sites of yards and old buildings, and described by the former in the 40th volume of *Archaeologia*. Tite there states that the length of Roman wall laid bare, forming the eastern boundary of the premises, was 110 ft. from north to south, and 25 ft. in height from the ancient ground level. He gives an elevation from

the inside showing a height of more than 43 ft. to the top, but less than 20 ft. of Roman masonry (no. 4, fig. 1).

Two double rows of bonding tiles are shown by him, but as no tiles appear at the base he clearly did not reach the Roman ground level. Above the Roman portion is later masonry, containing two arched windows, apparently Norman. This elevation was taken from almost the same point as a stereoscopic view

Fig. 2. View of the City Wall at Cooper's Row, 1864. From a photograph in the collection of the Society of Antiquaries.

exhibited here in 1864, and barely mentioned in *Proceedings*. From it we now give an illustration (fig. 2). The wall remains, and part of its external face can be seen from no. 8 The Crescent, Minories, where the length visible is about 34 ft. and height over 20 ft., and there is one small glazed aperture, with an opening to the south long ago blocked up. The latter has a well-defined semicircular arch. The original form of the glazed aperture is obscured by later repair. Its base is 12 ft. or more above the present ground level.

To return to the interior of Messrs. Barber's premises, where from various levels the masonry can be studied. It is obvious that the floor of their basement is above the original ground level of the Roman wall, and during an interview with their courteous managing director, Mr. Pohl, in February, 1911, we persuaded him to have a small excavation made against the most southern portion of it, that we might reach the base. It was found that the top of the row of three tiles, which on the inner face of the wall always marks the ground level, is here 6 in. below the floor. With their layers of intervening mortar they make a thickness of 8 in. Below that is a substructure of rough masonry to a depth of 1 ft. 5 in., resting on 3 ft. of puddled flint and clay. All the earth was a refilling. The original soil, where it touched the clay, must have been removed for the footings of a cross-wall still in existence. This filled-in soil contained various objects, among them three good wine-bottles of the late seventeenth or early eighteenth century, an old delft utensil, the usual tobacco-pipe, the inevitable oyster-shell, and the bones of animals. We might add that between this spot, where the wall begins in Messrs. Barber's premises, and the portion still to be seen farther south in Trinity Place, the railway cutting intervenes, which thus mutilated the long stretch of wall running north from the site of the Tower Postern, shown in Wilkinson's *Londina Illustrata* and in Archer's *Vestiges of Old London*.

The warehouse against the wall has been divided by Messrs. Barber into basement or cellar, ground floor, and first floor. Having been enabled to reach the Roman ground level and the foundations, we made a fresh measurement to the highest point of the medieval superstructure, which has a well-defined path near the top for purposes of defence. The battlements have been destroyed, but are shown farther south for a short distance by Wilkinson and Archer. We found that the height was considerably less than that appearing in Tite's elevation, being from the Roman ground level (not including the foundation of masonry) 35 ft. 2 in., or more than 23 ft. above the present roadway which slopes down to Cooper's Row. What height of this is Roman could not be precisely ascertained. Mr. Pohl has not filled in the excavation, but has left a square opening bricked on three sides, the wall forming the fourth, so that the ground level and foundations of the Roman structure can still be seen. Our thanks are due to him for his enlightened action.

America Square (no. 5, fig. 1).

In July, 1908, Mr. Bryan Corcoran informed us of building operations about to take place in America Square, north of Cooper's Row. On visiting the site, we found that nos. 15 and 16, the houses at the corner of John Street, had been pulled down. These had formed what was known as Kroll's Hotel. The site cleared was 60 ft. in length, and its western boundary, situated as it was in a straight

line between the existing portions of the city wall at Roman Wall House, Jewry Street (no. 6, fig. 1), to the north, and at Messrs. Barber's in Cooper's Row, was obviously on the site of the wall. At this point it also formed the boundary of the Tower Ward. The old houses that had been removed had basements 7 ft. 8 in. below the street level, but their foundations had not been carried much below that depth.

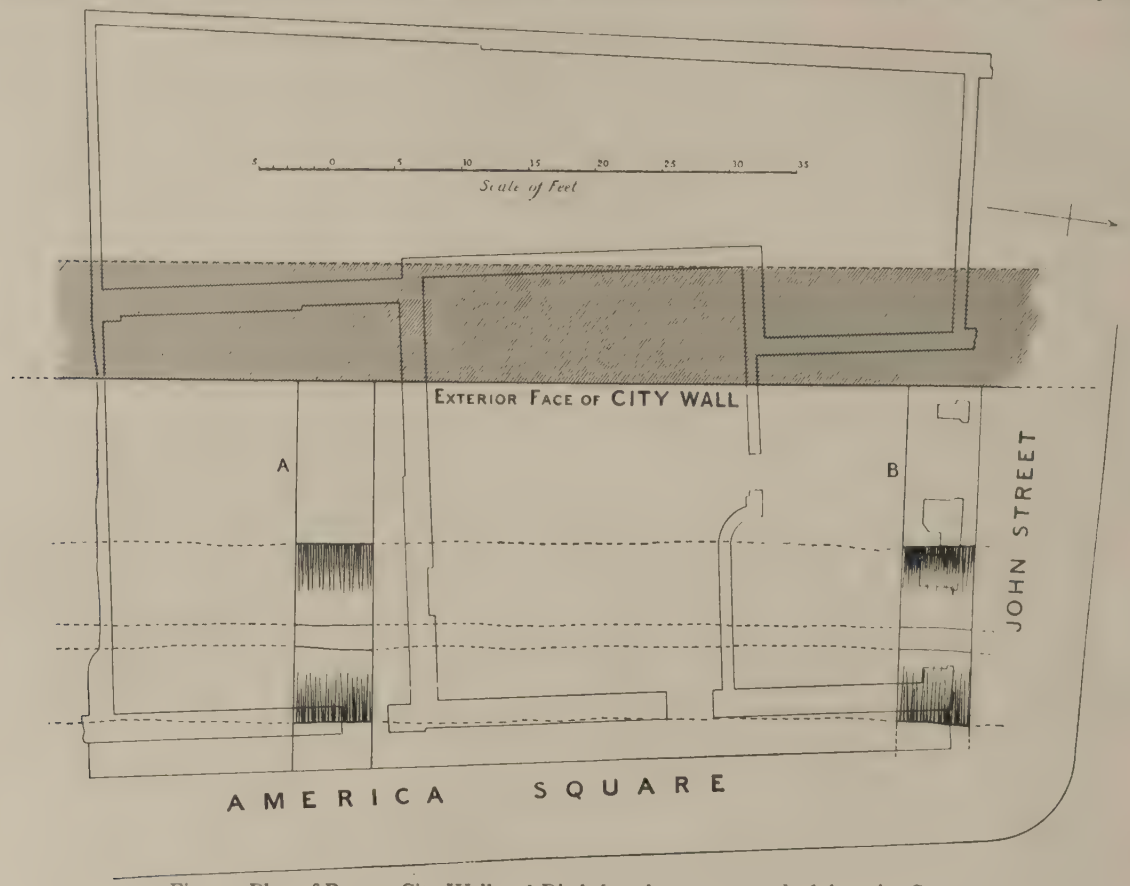


Fig. 3. Plan of Roman City Wall and Ditch found at nos. 15 and 16 America Square.

These conditions, therefore, offered a favourable chance of finding the made-earth of early historic times overlying the natural surface quite undisturbed.

Although at Jewry Street the accumulation of soil had been seen by us to be not more than about 10 ft., the observations of Mr. Langley in 1880,[1] during the widening of the Great Eastern Railway, showed that a short distance south of America Square the base of the city wall was buried about 20 ft. We knew, therefore, that between these two points there had been a noteworthy fall of the original surface. Mr. Langley mentions that he found running under the wall a small tile drain like that recorded by us in New Broad Street. He notes

[1] *Antiquary*, iii. 62-5.

also that the soil consisted largely of black mud, an indication that the level was low, and that water had settled in it. Although Mr. Langley's account shows very careful observation, he seems to have overlooked the Roman ditch: in such bad soil it was perhaps difficult to recognize it. South of the Great Eastern Railway the Roman ground level appears to have risen rather rapidly. It may

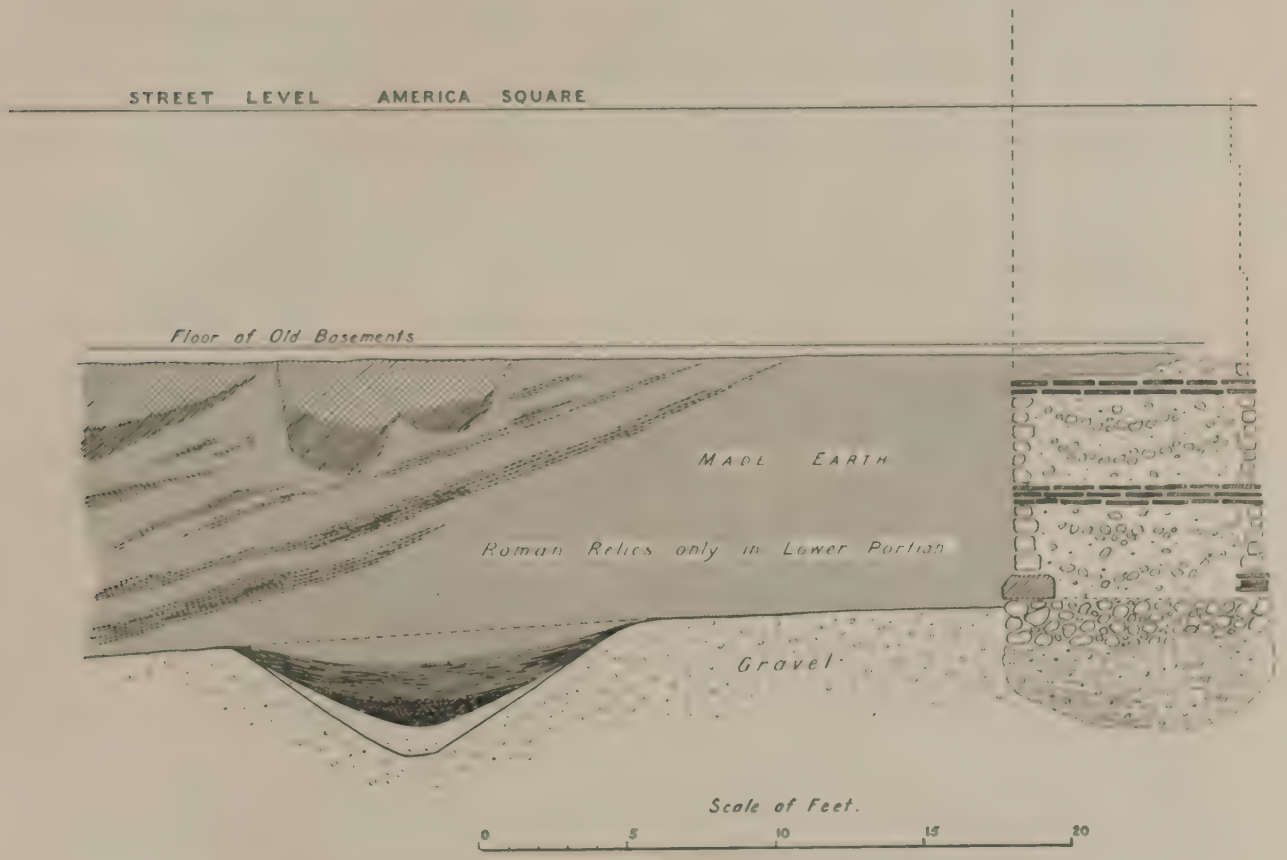


Fig. 4. Section of City Wall and Roman Ditch, 15 and 16 America Square.

be gathered from the measurements we have given of the wall at Cooper's Row that its base is there only about 12 ft. below the modern ground level.

The present surface at America Square shows no sign of the ancient hollow, perhaps a watercourse, of which, as far as we know, Mr. Langley's excavation reached the deepest part. Later, the medieval city ditch occupied the space now forming America Square, and the site of nos. 15 and 16, which extended 30 ft. in advance of the outside face of the wall, must have been on the inner slope of the ditch. If we assume that this was cut here as at other places, owing to the accumulation of soil on the surface between Roman times and the early

part of the thirteenth century, it would begin to slope from the face of the wall at a point much above the Roman ground level, and, being very wide, its greatest depth would be at a considerable distance from the wall. If, therefore, a Roman ditch had existed here, there was much likelihood of finding traces of it, and we determined if possible to obtain further light on a question that was very much occupying our thoughts.

The first indications of a Roman city ditch had been noticed by us at New Broad Street,[1] but there the depth of accumulated made-earth being only 10 ft., the later city ditch[2] had cut into it slightly on its outer side. On account of the small size some doubt was then cast on its having been any part of a general scheme.

In America Square there was promise of the original conditions having been undisturbed. Very early in the operations, the top of the wall was found running through the site at a depth of 9 ft., but the plan of the new buildings did not require a much deeper excavation, and this was not enough for our purpose. We therefore applied to the architect for leave to open up the wall to its base, and also to run a trench at right angles to it, by which means the Roman ditch, if in existence, would be intersected. The architect, and the contractor, Mr. H. Dove, fortunately interest themselves in London antiquities, and readily granted our request, giving us every possible help.

On uncovering the outer face of the wall, at the southern end of the site, where our trench was cut (A, fig. 3), the plinth was found resting at a depth of 16 ft. 3 in. Beneath it was 1 ft. 8 in. of rough substructure, and finally the usual puddling of clay and flint. Above the plinth 6 ft. of wall remained, which included a treble and a double course of bonding tiles. Many of the tiles were yellow; we have mentioned the presence of similar tiles by the Wardrobe and in the Bowyer Tower. The general character of the masonry was very similar to that which has been found at all points on the land side of Londinium, so that it will be unnecessary to repeat measurements which appear on the diagram, and which show only trifling variations from those of other parts already described. Except for some decay in the bonding tiles, the surface was remarkably well preserved for the external face, and this suggests that it must have been buried by an accumulation of soil much earlier than most parts of the wall (pl. XLI).

There was little evidence of the later city ditch, but its traces became more apparent as the trench was carried towards the roadway. Its line was clearly visible as the section developed, and it was sharply divided from the made-earth in which it had been formed. Of this, a depth of 9 ft. 9 in. remained next to the wall, but some of it had been removed in the construction of the old basements, and there is little doubt that when the medieval city ditch was dug the soil had

[1] *Archaeologia*, lx. 212.

[2] Or perhaps a later Roman ditch, see p. 279.

TWO VIEWS OF ROMAN CITY WALL, AT AMERICA SQUARE

Presented by the Society of Antiquaries of London, 1912

risen higher. From the filling of the ditch that remained, its gradual choking up, which is deplored by Stow,[1] could be plainly traced (fig. 4).

On the edge of the shelving side, after it had become firm ground, some rubbish pits had been cut. These were filled in the lower part with black soil, and contained fragments of sixteenth-century pottery. The characteristic black mud of the city ditch occurred only at the street end of the section and at a rather high level. It was growing thicker as it approached the roadway. The lower part of the filling was more of the nature of brown mould, but seams of black mould occurred at intervals. In the filling generally were the usual horn-cores, oyster, mussel and whelk shells, and many fragments of glazed pottery, delft, and stoneware. The whole of the city ditch filling was, however, very distinct from that of the original soil, which was a clean light loam. Some mixture occurred in the upper portion of this, but the 6 ft. of depth below consisted entirely of this light clean soil, and contained plentiful remains of the Roman period, but nothing later.

There were several portions of large amphorae and other pottery, including red Samian and slip painted wares, and quantities of broken tiles, many being of the flanged roofing description.

Beneath the loam, just below the level of the bottom of the plinth, we came upon gravel which appeared to be the natural old Thames deposit. This fell slightly towards the east, but there was nothing at first to indicate that a ditch of any kind had been formed in it. However, some pieces of tile in the gravel showed that it was not virgin soil, and in carrying the excavation deeper we found that rather more than a foot of this had been disturbed, being slightly stained with humus. The original gravel below was more compact and of a bright orange colour. We followed carefully along the top of the undisturbed gravel for a distance of about 12 ft. from the face of the wall, when it was found to fall sharply. It soon developed into a clearly cut ditch about 10 ft. wide, the bottom of which extended to a depth of 21 ft. 3 in. below the street level, or 5 ft. below the Roman ground surface, that is, the level of the bottom of the plinth.

The lower portion of this ditch was filled with a clean clayey deposit, but above this came a black band in which was a tightly packed mass of minute snail-shells. These have been identified by our friend Mr. A. S. Kennard, F.G.S., whose report on the molluscan remains found during our observations is printed as an appendix.

There were several fragments of Roman tile in the clay at the bottom, and in the other parts of the filling were fragments of Roman pottery, including a piece of red Samian. Nothing had occurred in any way to disturb this ditch, or the surface in which it was cut. The fragments appear to have become

[1] Stow's *Survey of London*, C. L. Kingsford's edition, vol. i, p. 19.

buried at an early date, and the great thickness of soil containing only Roman relics points to some special raising of the surface in this part.

In a later part of the building operations a deep trench was cut for footings in the front in John Street (B, fig. 3), which again gave us a chance of seeing the Roman ditch. Its depth from the pavement level was here only 18 ft., and the plinth of the wall rested at 13 ft. These measurements, compared with those at the south end of the site, show how rapidly the original surface fell at this particular point. Roman pottery was also found in the northern section of the ditch, and the conditions generally were the same as in our trench at the south end. Over the greater part of the site in America Square the Roman level was not cut into or disturbed.

Fig. 5. The Roman Ditch and City Wall, 15 and 16 America Square.

Aldgate—South Side of Street.

In April, 1907, a sewage tunnel extending under the roadway was driven from the houses on the south side of Aldgate High Street, when some solid masonry was encountered, the base of which rested at a depth of 16 ft. 6 in. below the present surface. It consisted of work of two distinct periods, one built against the other, which had to be tunnelled for a distance of 16 ft. This was on the site of the old gate, and 25 ft. east from the corner of Jewry Street.

The portion directly under the houses was comparatively modern and contained pieces of medieval tile, chalk, flint, and other material held together by a soft yellow mortar. The farther portion of this wall under the roadway was of ragstone, very solidly built with hard white mortar. In it were a few fragments of Roman tile, but no bonding courses, and in all probability it was medieval.

Our observations were carried on under unfavourable circumstances, owing to the restricted space of the tunnel and the gas from older sewers with which this was being connected. At 10 ft. from the house fronts, under the roadway, a built face of dressed stones, varying from 9 in. to 2 ft. 6 in. in length, was found running diagonally in a south-easterly direction, but it was not opened up farther than 2 ft. or 3 ft.

From its position, it seems by no means improbable that this farther masonry

may have been the base of a flanking tower of an earlier gate, such as is shown on the Survey of the Holy Trinity precincts, made about 1592, and preserved at Hatfield. Although, doubtless, by this time the gate had been rebuilt, it is possible that the base of the earlier gate had been used as a foundation.

Post Office, High Street, Aldgate, North Side.

Shortly after the discovery of remains on the south side of the street, an excavation took place on the north-west. This was in March, 1908, when the Post Office was destroyed for rebuilding. A mass of rubble masonry was then found under the street front, extending from the western limit of the excavation for a distance of 16 ft. 6 in. It had been previously cut into, and only that portion remained which lay under the pavement. As the footings of the new basements were carried somewhat deeper, a further portion was removed to a depth of 10 ft. Its base, however, was not reached, and the concrete of the footings having been already laid when we arrived on the scene, it was not possible to ascertain to what depth it extended. In the western corner were the remains of a curious little chamber, the lower part of which was built of neatly dressed sandstone and vaulted with brick. At the west it extended beneath the adjoining buildings, but it passed for a length of 4 ft. into the Post Office site, when it terminated in a smaller compartment or recess, which continued for another 2 ft., and the remaining portion of which was only about 2 ft. 9 in. in height, the floor being composed of a large slab of stone. Although the digging was carried about 1 ft. below this, the floor of the larger compartment was not found. The masonry continued towards the east for about 10 ft.; it was very hard and solid, formed of a large variety of materials, the principal of which was ragstone, but there were also fragments of chalk, flint, oolite, and of Roman tiles, some medieval tiles, and pieces of brick like that forming the upper part of the chamber. The whole was well grouted with good white mortar, and formed a very hard and compact mass, the task of its removal being one of great difficulty. On this account the

Fig. 6. Plan of the site of Aldgate, showing the position of recent discoveries.

workmen concluded that it was Roman, and declared that it was considerably harder than the city wall.

It is commonly supposed that Roman walls far exceed in hardness all those of later periods, but our observations have led us to conclude that walls of extreme resisting power have been built in most periods, and that, strong as the

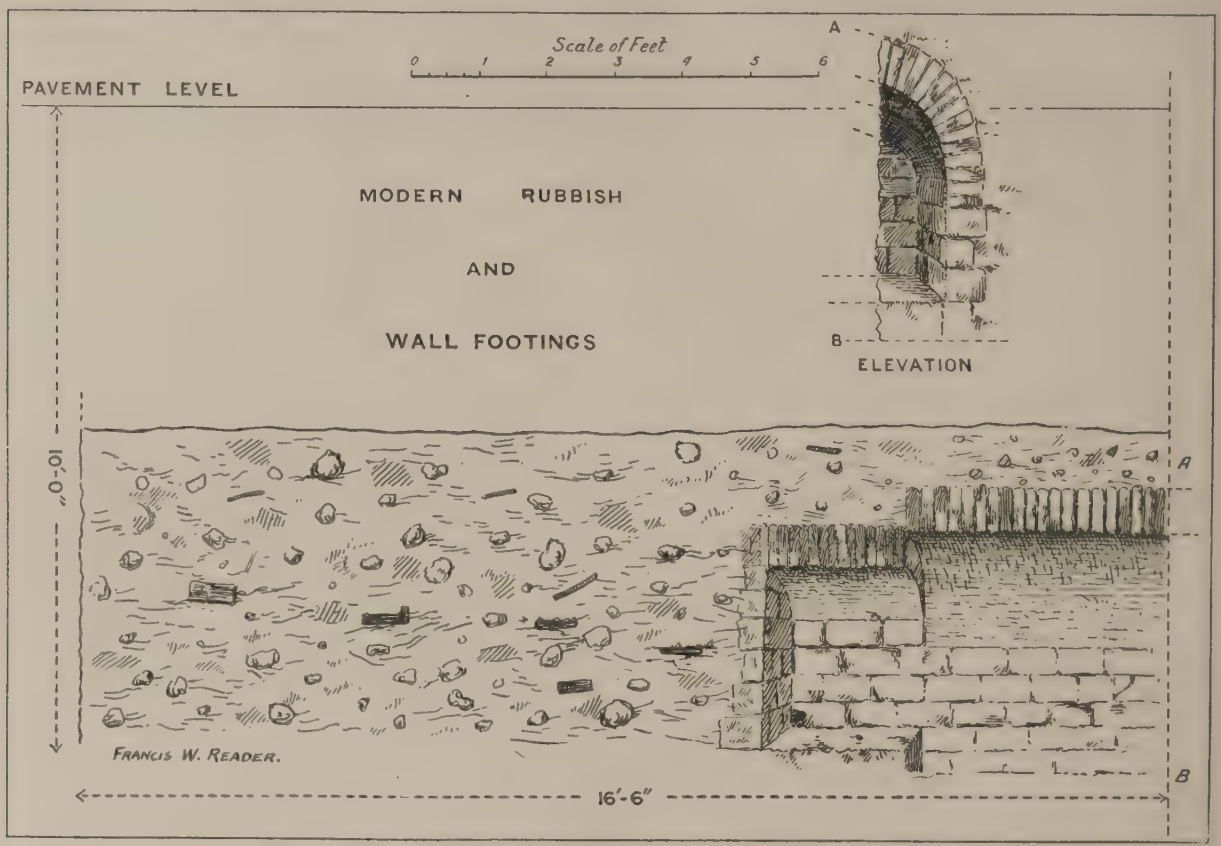


Fig. 7. Remains of the Gate found at the Post Office, Aldgate High Street.

city wall undoubtedly is, nevertheless, owing to the incomplete manner in which the mortar is grouted into the stones forming the core, its destruction is less difficult than that of some later but more compactly built masonry. The structure at this portion of Aldgate contained brick and medieval tile. It was most likely part of the rebuilding finished in 1609. We include an account of these Aldgate excavations, though the remains found were medieval, because they formed part of a structure which was probably on the site of a Roman gateway.

A short note here on the medieval and later Aldgate may, perhaps, not be thought superfluous. Of the Roman gate we know nothing. In 1215 it seems

to have been ruinous, when the barons who were at war with King John entered the city through it. Shortly afterwards it was rebuilt. In 1374, as recorded by Riley in his *Memorials of London*, p. 377, a lease was granted for his life to Geoffrey Chaucer 'of the whole of the dwelling-house above the gate of Aldgate with the rooms built over, and a certain cellar beneath the same gate and the appurtenances thereof', he undertaking to keep them in repair under penalty of being turned out if he neglected to do so. He was not allowed to sublet, and in troublous times the mayor and other authorities were to have access to 'the said house and rooms', and to take such measures with regard to them as might be thought expedient. This was about the time of Chaucer's appointment to the office of Controller of Customs, when it became necessary for him to live near the place of his official business. He seems to have resided over Aldgate, except when abroad on the King's service, until 1380, in which year it was enacted that no grant should be made of the gates nor of the dwelling-houses above the gates. The original Custom House, rebuilt in 1385, was much nearer Tower Wharf than the present one. Stow calls Aldgate one of the four principal gates. In his time it had a place for two portcullises, but only one remained.

The gate was taken down in 1606, the foundation stone of the new one being laid in the following year by Martin Bond, a worthy citizen, whose father, William Bond, had bought Crosby Place in 1566, and from whose family it was bought in 1594 by Sir John Spencer, ancestor of the Marquis of Northampton. Martin Bond's monument, showing him as captain of train-bands in his tent at Tilbury, is at the church of St. Helen, Bishopsgate Street. He was twice M.P. for the City of London. On the east face of this later Aldgate were imitations cut in stone of Roman coins found in making the foundations. There were also on the gate various statues, among them one of James I. The rooms above were, in the early part of the eighteenth century, used by one of the Lord Mayor's carvers, and afterwards as a charity school. The gate was taken down in 1761. The materials were sold to a Mr. Mussel, who rebuilt it by his residence at Bethnal Green, to which he gave the name of Aldgate House.

Duke Street, Aldgate. Cass Schools Extension.

The site was that between no. 7 and the synagogue at the corner of Church Passage, extending to Mitre Street on the west. A large space was excavated, much of it being intersected by old walls, for the most part of chalk and apparently of mediæval construction. These occurred chiefly on the northern portion adjoining Duke Street.

Over the space made-earth had accumulated to a depth of 10 ft. to 17 ft., when the original surface was found to consist of brick-earth which ran very irregu-

larly, having many pit-like hollows suggesting that at some early time it had been dug away for brick-making. In some places it was 6 ft. or 7 ft. deep, while in some of the hollows it had been wholly removed.

A carved stone of the Roman period was found, having three figures in relief, the meaning of which is not yet satisfactorily explained. This is now preserved in the Guildhall Museum (pl. LXV, fig. 2). There were also many portions of amphorae and quantities of Samian and other pottery. Several carved stones of medieval date were also found; probably they had belonged to the Priory of Holy Trinity. Fragments of later glazed pottery, delft, etc., were plentiful.

123 London Wall.

Excavations for rebuilding took place in March, 1911, on the site of no. 123, on the north side of the street called London Wall, a short distance to the west of Moorgate.

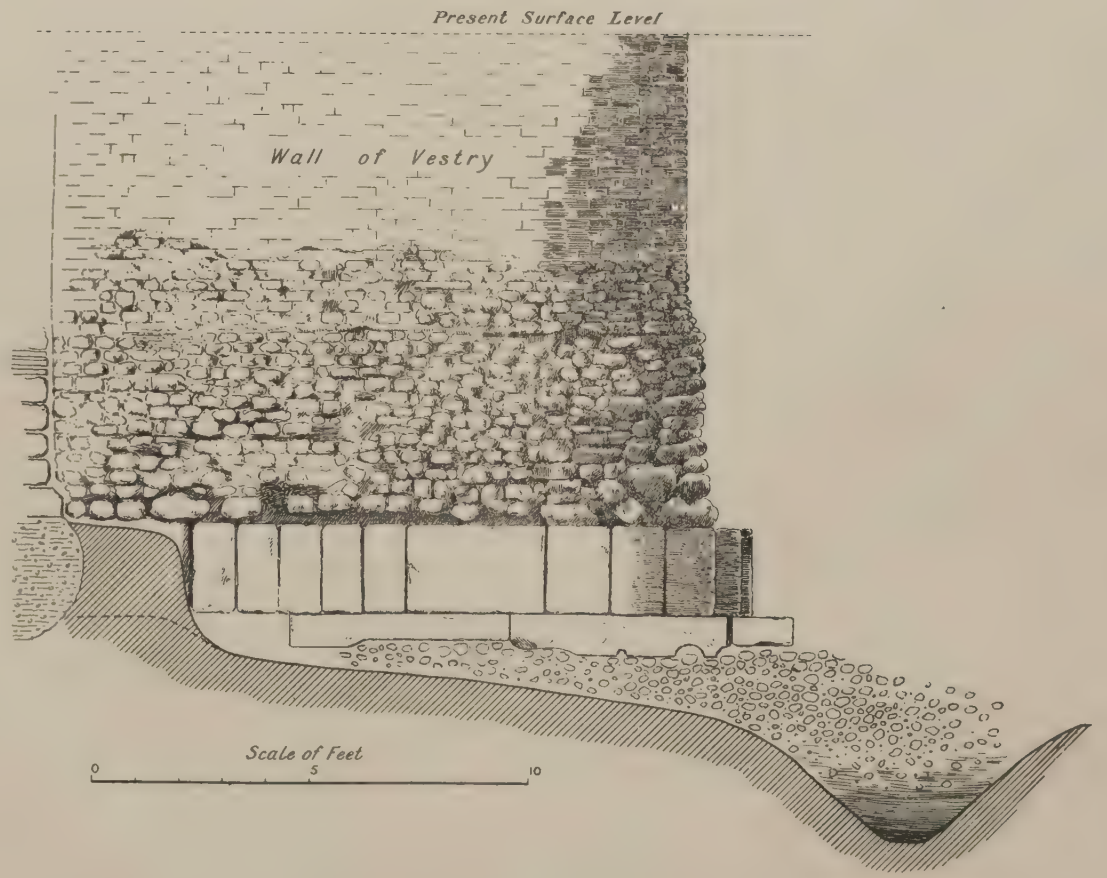
A portion of the Roman city wall was uncovered, and we describe this here for convenience, though we do not quite follow our itinerary. The outer face had been cut away as far as the front of the house on what is known as the 'building line'. Beyond this it still exists, extending under the pavement of the footway. Altogether about 5 ft. of the thickness of the wall had been removed. Some of this had been previously destroyed and other masonry built on to it, so that no part of the outer face or of the plinth remained in position, but fragments of sandstone were showing in the later rubble masonry.

The wall, all of which was Roman, reached to within 2 ft. of the pavement, and went down to 10 ft. 3 in. below the present street level. All the original soil near the wall had been dug out, as had also some of the gravel, so that there was no opportunity of observing the Roman ditch.

The space excavated extended as far as Fore Street, and traces of the black soil of the city ditch were found in all the cuttings for footings, and the ditch appeared to extend under the roadway of Fore Street.

The filling of the ditch was not wholly dug out, but the trenches showed that the deepest part was about 50 ft. distant from the Roman wall, and that its depth was 18 ft. In this there was a boarded channel 6 ft. wide, having two rows of piles with planks, and 'rakers' at intervals, forming its sides. This channel appeared to have been formed after the filling up of the medieval ditch, the bottom of which was found on both sides of it to be 17 ft. A representation of such a channel seems to be indicated on Ryther's plan, 1st edition, 1604.

Incidentally, it should perhaps be mentioned that in the spring of 1912, while telegraph cables were being laid along the street called London Wall, from



F.W.R.

EAST ELEVATION, BASTION, ALL HALLOWS', LONDON WALL.

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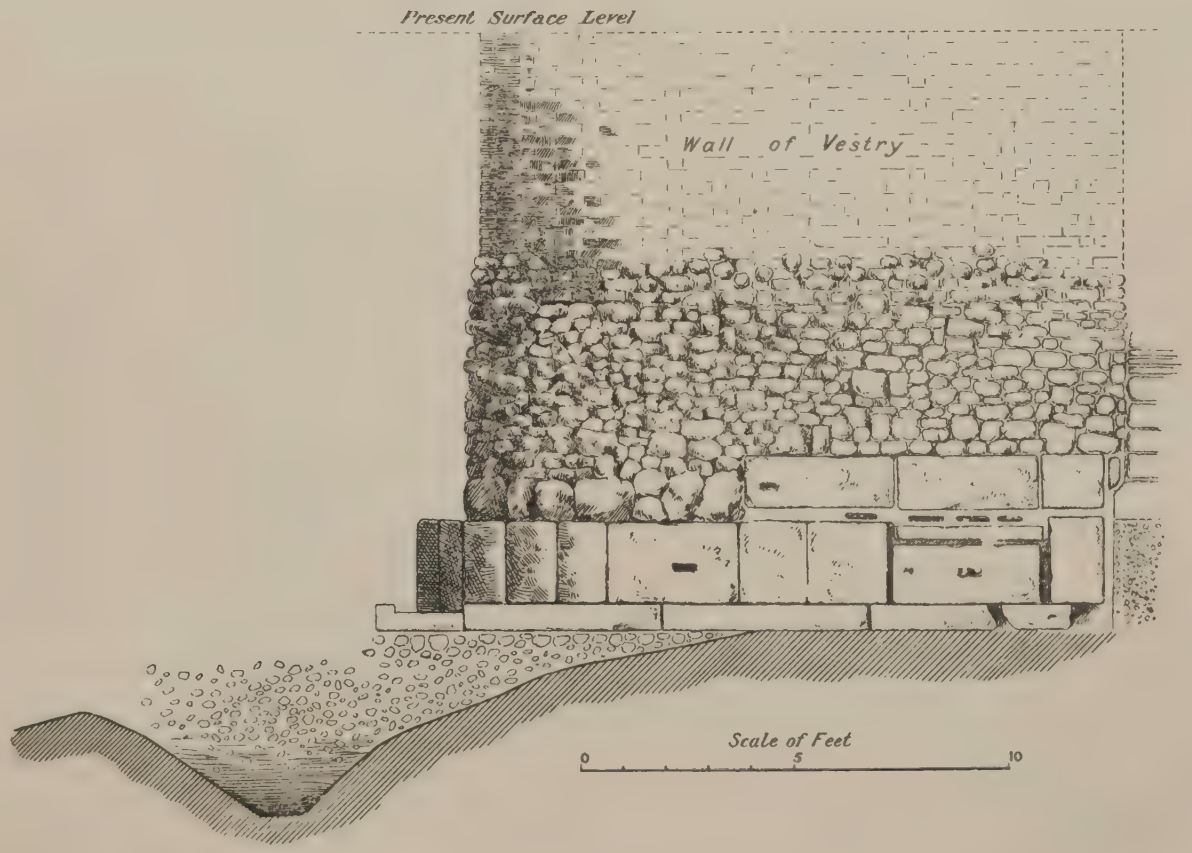

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WEST ELEVATION, BASTION, ALL HALLOWS', LONDON WALL.

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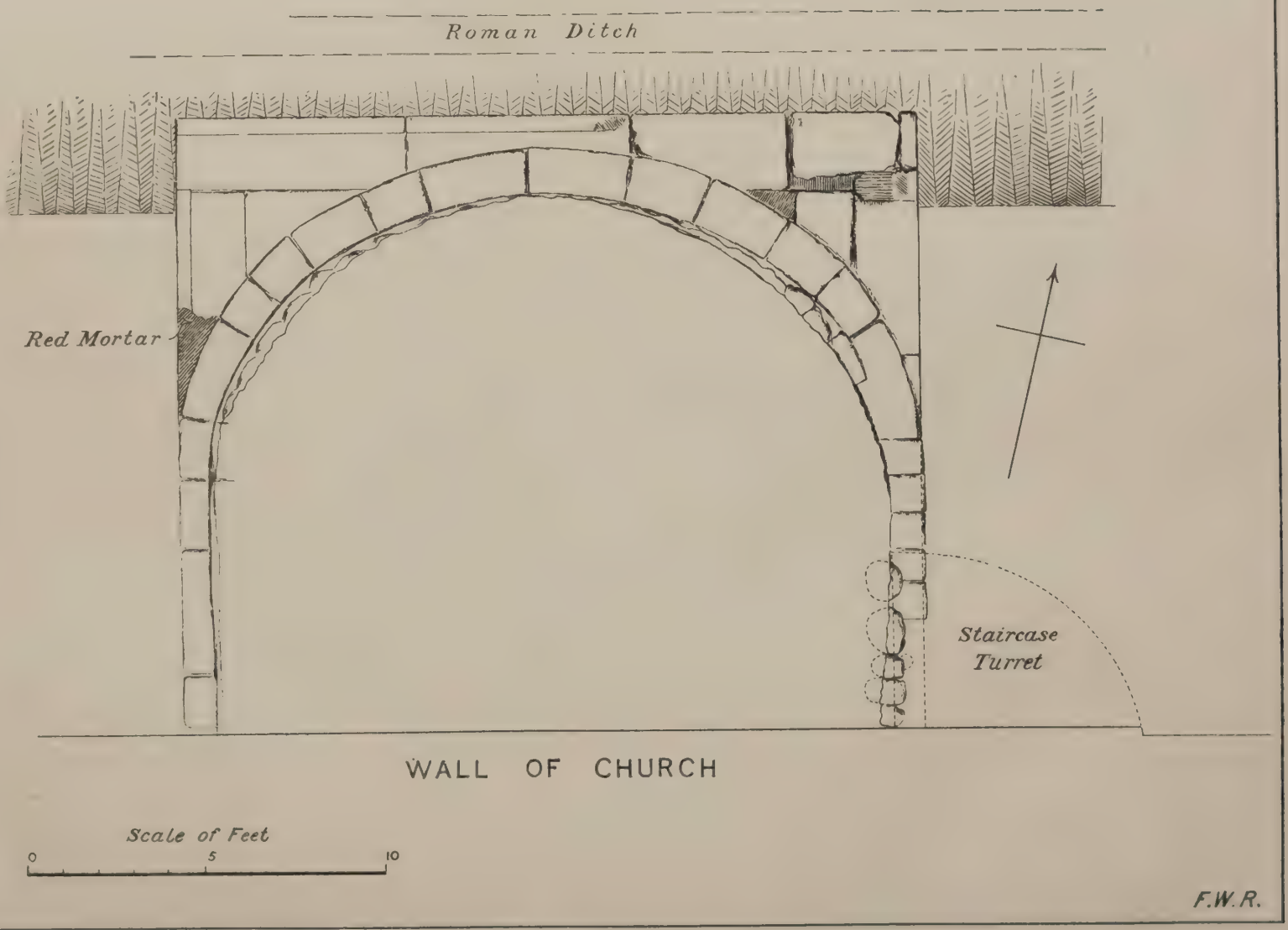

PLAN OF BASTION, ALL HALLOWS', LONDON WALL.

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Moorgate to Bishopsgate, a course followed in 1905 by the trench for telephone wires which we described in our previous paper, the city wall was again cut into and the street littered with fragments of Roman masonry.

Bastion: All Hallows Church.

Mention was made in our former report of an excavation we had then in hand beneath the foundations of the vestry of All Hallows Church, London Wall, in order to ascertain whether this structure, which was semicircular, rested on the remains of a bastion.

Although no bastion is marked at this spot on any of the old maps, the shape and proportions of this building, and its position against the city wall, rendered it almost certain that the base of a bastion had been discovered at the rebuilding of the church by Dance in 1760, and had subsequently been utilized as the foundation of the vestry, which was not erected until some years after the church.

As the building operations in New Broad Street did not necessitate digging in this direction, or even, in the first case, the removal of the old cellars surrounding the vestry, we had to obtain leave for a special excavation, both from the contractors and the vicar. Leave was granted for this, but on condition that none of the structures were in any way interfered with. We had to content ourselves, therefore, with sinking a shaft, 5 ft. by 4 ft., down the side of the vestry under the cellars. We very soon found that our surmise was correct, and that the bricks of which the vestry is built only continued for about 9 in. below the flooring of these cellars, which was 8 ft. 6 in. beneath the street level. These bricks were laid on the stonework of a bastion, which, like the rest of the bastions so far as they have been observed, is of random rubble, built principally of irregular pieces of ragstone, but with this are portions of Roman tile and other material, much of it appearing to have done duty in some previous building. None of the tiles were complete, and they did not form bonds as in the city wall, but were merely fragments used indiscriminately, although in one place they were in a somewhat straight line, having perhaps been found useful for roughly levelling up the work. This structure was found to continue to a depth of 4 ft. 6 in. below the vault floor, or 11 ft. 9 in. below the street level, when a base was found formed of large squared stones, with a set-off of 8 in. All these stones were of a uniform height of 2 ft., but varied in width from 1 ft. 3 in. to 3 ft.; they had evidently been employed in some former building, as several of them had lewis-holes which appeared on the face in their present position. This base rested in turn on a table of large flat stones, 9 in. thick, and measuring superficially 6 ft. 3 in. by 2 ft. Most of them seemed to have been portions of a plain cornice of some

destroyed building, having on one edge a simple return at right angles. No attempt had been made to level the stones by removing the projecting return, but this was laid so as to form a coping edge along the side.

In the front these stones were laid in an opposite direction, so that the edge was continued on the outside, but in this way a break was caused in the edge at the angle. The Roman origin of the structure was shown by the red mortar in which the joints had been set, which was spread freely in places on the surface, particularly at the point where it joined the base of the bastion.

Owing to the necessity of keeping the cellars above intact, the exploration of this portion of the bastion was most difficult, the shaft being carried to the base at a depth of 14 ft., and a tunnel then driven in both directions completely to open up the side and a portion of the front. The foundations of the main part of the structure were laid in the natural gravel about 3 ft. below the base of the Roman city wall, but, as the digging was carried at the side of the table towards the front, the gravel was found to fall rapidly, and the filling beneath the front stones consisted of black mud, chalk rubble, and rubbish in which oyster-shells, Roman pottery, and tile freely occurred. It soon became apparent that this was the Roman ditch which we had found running throughout the site, and on which we reported in our paper of 1906.

The old cellars, which had been kept standing throughout the building operations, were finally pulled down, and it was decided that the ground between the church and the new buildings of New Broad Street should be sloped and sown with grass seed. Permission to excavate the remaining or eastern half of the bastion was therefore applied for and obtained. The ground was cleared, and a shoring put up against the portion previously excavated, so that the earth removed could be piled upon that part already examined, as the new buildings had completely closed in the vestry, leaving very little space for our operations.

The conditions were vastly better than those of the first portion examined, and we were able to open up to daylight this second or eastern half of the bastion. From the surface to about the level of the projecting base, the soil showed signs of disturbance, and it had no doubt been dug into at the time of the building of the church and vestry. Many pieces of porcelain, marbled and combed wares, indicating the eighteenth century, came to light, together with plentiful remains of delft, slip, green glaze, stoneware and other pottery, such as occur in the ordinary city ditch filling.

As the soil was removed, the staircase turret of the vestry was found to be very insecure, having apparently been added later than the vestry, against which it had been built without bonding in or proper footings. After first shoring with timber, an iron girder was fixed under it, by which means it is now in a safer condition than was ever previously the case. The staircase turret having been

TWO VIEWS OF BASE OF ALL HALLOWS BASTION

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BASE OF ALL HALLOWS BASTION
From a drawing by A. Hugh Fisher

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secured, digging was carried under it, so as to open the base of the Roman city wall, which was found intact and well preserved, the plinth resting at a depth of 11 ft. 4 in. below the street level of New Broad Street.

The table was not continued on the east side so near to the wall as on the west; it terminated 3 ft. in advance of it. The gravel soil in this intervening space was undisturbed. Beyond these 3 ft. of undisturbed gravel the soil had been dug away to a depth of 3 ft., which was carried as far as the Roman ditch. This the bastion builders found necessary to fill, which they did by throwing into it a quantity of chalk, flint, and rough pieces of other stones. The filling, when levelled, was covered with a layer of rough white mortar, on which were laid the long slabs of stone forming the table. These stones were of similar description to those found in the west portion, and were evidently remains of ruined buildings, some having the moulded surfaces placed on the under side, any unevenness being compensated for by pieces of Roman tile. The top surface of the table was practically level, and one fragment of a fluted angle pilaster with a cap (fig. 8) had the projecting mouldings chipped off one side, which was placed uppermost. Some pieces of these mouldings were found in the filling of the ditch. The long stones with the return, which we supposed to have formed a cornice or a frieze, were continued along the front of the table. The joints and uneven surface of the table were plentifully filled with the characteristic red mortar of the Romans.

Fig. 8. The Angle Pilaster built into the base of the Bastion at All Hallows, London Wall.

The construction of the bastion was uniformly the same. First the large blocks 2 ft. high were laid on the table, and formed the base on which the drum of the tower was raised, this being of random rubble of a variety of materials closely bound together with white mortar.

Very few relics were found in the soil from just above the table surface, but it did not appear to have been disturbed since it was laid down. There were some portions of roofing tiles and a few fragments of Roman pottery,

including some Samian, also oyster-shells and bones. Similar relics were found in the ditch. Under the layer of chalk and flint the ditch-filling was black mud, containing snail-shells and remains of rushes. There was also a horse's skull and a human femur. Beyond the extent of the table the ditch had not been filled with chalk and stones; it had clearly remained open for some time after the building of the bastion, accumulating mud and rubbish against the obstruction of the bastion footings.

Site of Christ's Hospital.

The digging of so large a site as that of Christ's Hospital, in 1908-9, was fully expected to produce some important discoveries, and we determined to watch the operations. The city wall was known to traverse the site east and west, old plans showing three bastions, that to the west, near Giltspur Street, marking the angle where the wall turned south to Newgate. Although large buildings had been erected here at various times, much of the ground had remained open, and it was confidently hoped that a good deal of the original surface within the wall had been undisturbed. On the outside little was to be expected but the usual filling of the city ditch.

We soon found, however, that the method of the contractors was not one favourable for our observations. Two large trenches were first begun, one parallel with King Edward Street, and the other at right angles to it, at the south extending past the present church to about the end of the original building, the site of which is now occupied by a disused burial-ground. The digging was altogether too rapid, and of too vigorous a nature, for more than a superficial record to be made. Many walls belonging to the Greyfriars period were disclosed, and as quickly destroyed.

In the trench parallel with King Edward Street an open drain of ragstone was found running the greater part of its length. It lay at a depth of about 7 ft. below the present surface. The stones of which this was built were well dressed, but the sides had been broken down, only about 1 ft. or less in height remaining. The channel was 3 ft. wide, and much moss-grown, while in places were quantities of leaves in good preservation, which had drifted in and become buried. Made-earth constituted the filling of the trench to a depth of about 13 ft. to 14 ft., when natural brick-earth was reached. Owing to the method of excavation, by which the upper soil was tumbled down into the skips at the bottom of the trenches, it was quite impossible to get any idea of the position of the majority of the objects we happened to see. Relics of the seventeenth century were fairly plentiful and in places the Roman surface was come upon, but little was found beyond the usual fragments of pottery, tiles, oyster-shells, etc. Speaking

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generally of excavations all over the precincts, many scattered fragments of Samian ware came to light (see Appendix). Otherwise objects of special interest were not numerous; at least, few passed into the hands of Mr. F. Woodward, representative of the Office of Works, who did his best to obtain anything that could be rescued.

The trench at right angles to King Edward Street ran by the side of the church and churchyard, and laid bare the foundations of the old cloisters, which consisted of a series of chalk arches. Directly beneath the remains of the cloister was an ancient ditch or stream-bed, filled with very black peaty mud, in which were plentiful remains of reeds and rushes. This was evidently open during the Roman period, as its base contained only relics of that period, and these also appeared in a considerable part of the filling. If this water-way was a natural stream, its banks had been a good deal modified, for they were cut very straight, and appeared to be artificial. The width of the channel was 40 ft. at the top, and it ran from the north under the nave of the old church (the present churchyard), its eastern bank being 55 ft. west of the west front of the present church. Its depth at the centre was 31 ft. 6 in. from the present surface level, passing through the brick-earth into the gravel, here reached at a depth of 25 ft. 6 in.

The remains of an ancient wall were found resting in the bed of this stream, somewhat on the eastern side, and following the same direction. It was of ragstone, 8 ft. in thickness, and was carried below the stream base into the gravel. This wall was different in character from any of those of the conventual buildings, and lay at a much greater depth, and there is little doubt that it was of Roman construction. It began close to the churchyard, and continued for 14 ft., when there was a gap of 12 ft., after which it occurred again, being traced as far as the excavation was carried. As the digging was continued to the north, better sections of the stream were opened out. On the west side the gravel was capped with brick-earth, which rose to within 13 ft. of the present surface just west of the churchyard. We had a more favourable opportunity of examining the deposit in this part, and it became quite clear that the filling of black mud had come about during the Roman occupation, all the relics, which were fairly abundant, being of that period.

On the east side the ground had been disturbed to a greater depth by the foundations of the conventual buildings, and also by the lower ragstone wall in the eastern side of the stream. It was not clear how the course of this stream continued farther to the north, as it was intercepted by the large buildings of the school, and finally by the city ditch. As nearly as we could see, it passed under the building known as the mathematical school.

A third trench was carried from King Edward Street along the north

portion of the Christ's Hospital site, this being the course of the city ditch. The soil was quite of the usual description. Another trench was soon carried along the line of the city wall from east to west, and in this, near King Edward Street, a fine section of the Roman city wall was laid bare. The total height remaining was 10 ft. 2 in., the plinth resting at a depth of 13 ft. 8 in. below the present ground level (pl. XLIX, fig. 2, from a photograph by Mr. Hembry). The wall had been built on the natural surface of the brick-earth, into which the usual rough foundations of flint and clay puddling had been inserted.

There were indications, perhaps not very definite, of a bank having been reared against the inside face of the wall. Overlying the brickwork, and extending 16 ft. 6 in. from the inner three tiles, which are always at the same level as the external plinth, was a bank of light orange-coloured loam, which sloped up to the level of the first row of bonding tiles. This showed very distinctly against the dark made-earth with which it was covered. Whatever this bank may have been, it was no doubt of early construction, when gravels and brick-earth formed the surface, and before the accumulation of the dark made-earth. With regard to the probability of this bank having formed a fighting platform, it should be noted that, although it has been looked for, at no other point has any similar feature been observed. The small dimensions also of what was seen here seems against its having been connected with the wall defences, unless we suppose that it had afterwards been reduced in size. The perfect condition generally of the inner masonry of the wall certainly warrants the belief that it had been buried very early, and in a manner for which the natural rise of the soil of the city would hardly seem to be accountable. On cutting back this section, the soil was soon found to have been disturbed, so that no extended observation of this bank was possible.

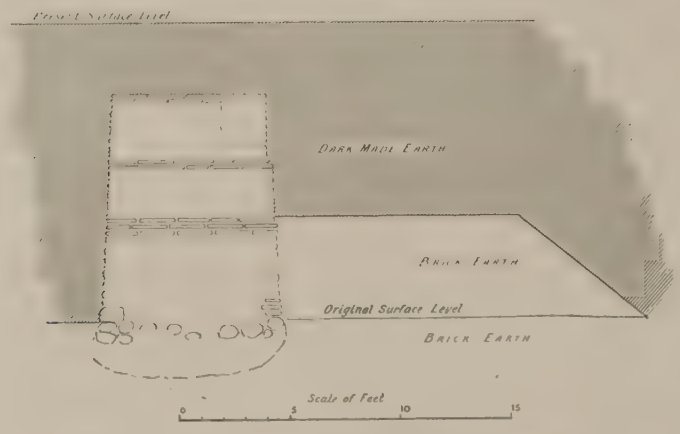

Fig. 9. Section of City Wall with probable remains of Inner Bank. Site of Christ's Hospital.

First Bastion and Roman Ditches.

A short distance to the west of this section of the city wall, amid a mass of foundations of various ages, the remains were found of the most easterly

bastion on the site of Christ's Hospital. The western half of this had been largely destroyed, but much of the front and its east side were intact. It was built in the usual manner, being of random rubble, the material consisting mostly of small irregular pieces of ragstone, but there were many flints and other stones. As is always the case with London bastions, there were no bonds of tiles, but many pieces of Roman tile were worked haphazard into the fabric, the whole being well grouted with mortar, and constructed solidly in the horse-shoe form.

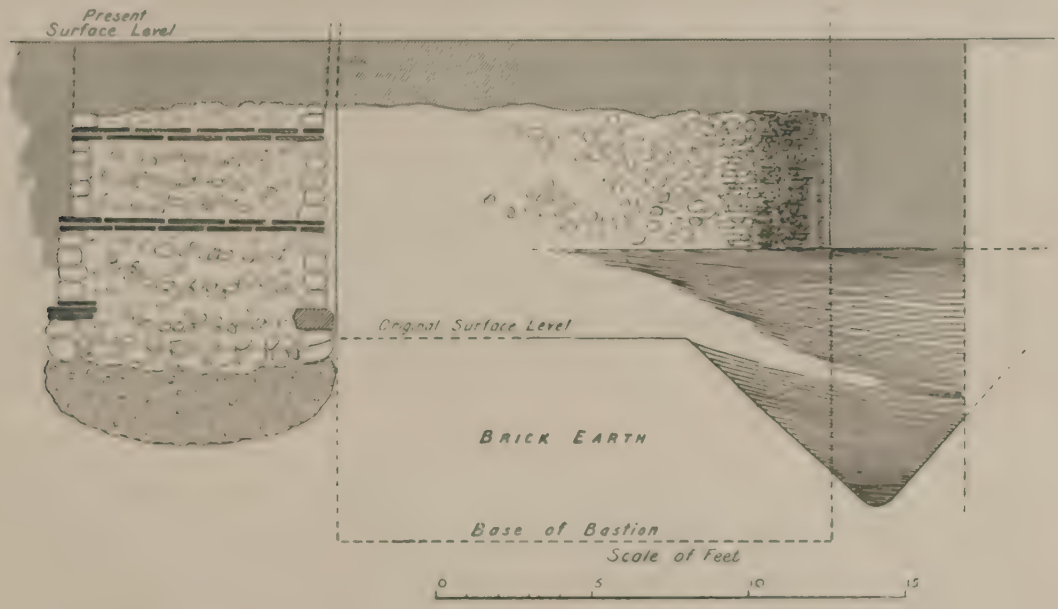

Fig. 10. Section showing the City Wall, the First Bastion, and the Roman Ditch. Site of Christ's Hospital. (See also pl XLVIII, fig. 1.)

Owing to the resistance offered by this formidable obstacle, which defied the ordinary methods of excavation, the digging was carried on in the softer material adjoining it, leaving it isolated and disclosing clearly the piece of the city wall against which it was built, together with a section of the Roman ditch, in which the bastion partly obtruded itself (fig. 10 and pl. XLVIII, fig. 1).

The top of the wall and the bastion which remained lay only 18 in. below the surface. The base of the plinth was found at a depth of 9 ft. 6 in., below which were the substructure and the flint and clay puddling extending for another 3 ft. or 4 ft. into the brick-earth.

The usual distance of about 10 ft. or 12 ft. separated the ditch from the wall. A portion of the outer side of the ditch had been removed by a previous trench, if indeed it had not already been destroyed by the medieval city ditch, but the

greater part of it remained, and its filling, although not so black as that of the medieval ditch, was sufficiently dark to show in strong contrast with the bright colour of the brick-earth in which it was dug. The width was undoubtedly about 12 ft., and it had been cut 6 ft. 6 in. deep to a sharp V-shape. The former finds of this ditch had been in gravel, and had a narrow flat bottom: this difference is probably the result of the nature of the soil.

The bastion had been carried down 7 ft. below the base of the wall-plinth, by reason of which it rested firmly on undisturbed soil, and consequently the ditch was quite ignored by the bastion builders instead of being filled in and built over, as at All Hallows Church. On this account, probably, the base of the bastion was not extended; it was simply carried straight down. Such was the strength of this masonry that it had to be destroyed by explosives. As well as we were able, between the various blastings necessary to remove it, we examined the material, but failed to recognize any carved or shaped stones such as have occurred in several of the bastions. The débris was finally broken up and used in the concrete for the present Post Office buildings.

The presence of the small Roman ditch at this point is interesting and valuable, because it establishes this feature as part of the original scheme of the builders of the wall. It has now been found in considerable stretches at such widely separated points as America Square, New Broad Street, and Christ's Hospital, and quite disposes of the idea that there must have been a large defensive ditch at the time the wall was built.

There is considerable difficulty in reconciling this with the discovery, on the site of the General Post Office at Aldersgate reported by Mr. G. E. Fox, F.S.A., of a Roman ditch 75 ft. wide and 14 ft. 1 in. deep, having in the middle a raised platform for the support of a trestle bridge. It seems, however, probable that this wider ditch may have been part of a later scheme for strengthening the defences of the city at the time the bastions were erected. As we have seen, the first ditch, which could have served little purpose except that of a drain, became practically obliterated by the building of the bastions. A more important ditch extending from the front of the bastions appears then to have been cut, and of this we found evidence a little to the west of the bastion just described. Here was disclosed the section of a ditch about 25 ft. wide and 14 ft. deep, its inner side having cut through the bottom of the original little ditch, but the remains of this were plainly to be recognized (fig. 11). We have nowhere found the small ditch so cut away as at this point where the second ditch was visible. Perhaps, therefore, the constructors of the later Roman ditch had here accidentally deviated from their proper line somewhat nearer the wall.

In all parts the outer side of the original ditch had been partly destroyed, and this we had attributed to the construction of the medieval ditch. There is

1. VIEW OF ROMAN CITY WALL (A), FIRST BASTION (B), AND ROMAN DITCH (C), SITE OF CHRIST'S HOSPITAL

2. THE MIDDLE BASTION, SITE OF CHRIST'S HOSPITAL, LOOKING NORTH-WEST

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equal likelihood that it was caused by the formation of the second Roman ditch, which in its turn was destroyed by the medieval ditch. The possibilities of either of the Roman ditches having survived the energies of the constructors or cleansers of the Middle Ages are naturally limited, but more particularly does this apply to the second ditch, the advanced position of which would render it more liable to have been swallowed by the still larger medieval fosse. Besides this, so little attention has been directed to these ancient works of the city's defence that it is far from surprising that evidence of either of the earlier ditches should have escaped notice in the vast accumulation of mud in which

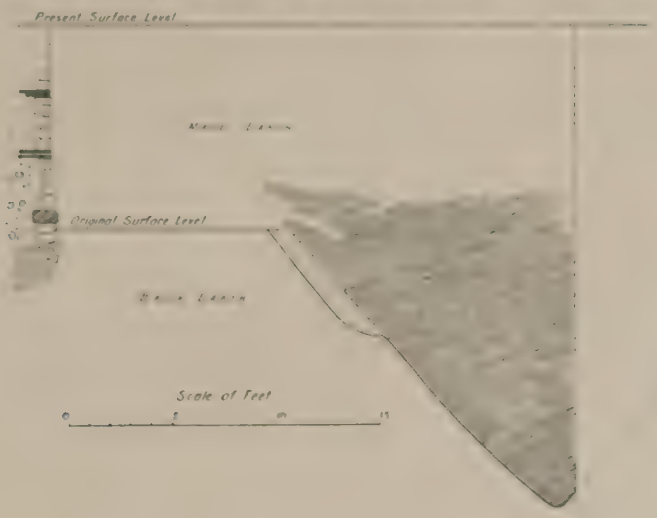

Fig. 11. Section of the First and Second Roman Ditches.
Site of Christ's Hospital.

the medieval ditch involved them, and of which, except for an occasional fortunate accident, this later work seems for the most part to have removed any trace.

It is therefore, on the present evidence, impossible to say confidently that a second and larger ditch was carried all round London by the Romans, but it certainly was on the site of Christ's Hospital, and this, taken in conjunction with the discovery at Aldersgate, where the ditch exactly corresponds in depth, forms satisfactory evidence for such an assumption.

Slight traces of a similar second ditch were observed at the extreme west end of the site at New Broad Street, in the trench where the original Roman ditch was first observed. We noted this at the time of the discovery, but although succeeding trenches amply confirmed the first ditch, the second was not again recognized; we therefore did not feel warranted in putting on record what then seemed to be a mere accident in the filling of the later city ditch.

In the light of this later discovery at Christ's Hospital site it assumes more importance, and in spite of its being somewhat indefinite ought now to be mentioned.

As we have remarked in our account of the discoveries in America Square, on that site there was a large accumulation of soil in Roman times. After the formation of the earlier ditch, the second ditch, if it ever existed there, would have started at a higher level, and would most likely have been destroyed by the medieval ditch. A little further development of our trench, however, might have revealed it, but unfortunately we had not then the knowledge that would have prompted us to look for evidence on this subject.

That the ditch at Aldersgate, recorded by Mr. Fox, is of so much greater width may perhaps be explained by its being near a gate. It is at least easier to understand a ditch 25 ft. wide and 14 ft. deep being widened at such a point to 75 ft. without alteration of depth, than one of 10 ft. or 12 ft., the depth of which is only 5 ft. 6 in. We may add that Mr. Thomas Locke, who supplied the material for Mr. Fox's plan and section, assures us of their accuracy.

As the digging was carried to the west of this eastern bastion a good stretch of the Roman wall was uncovered, and presented the usual features. The Roman work continued unbroken but of varying height until reaching the eastern extremity of the Great Hall. At one point a thick chalk wall was built upon it: this extended 2 ft. beyond the thickness of the wall on either side.

Close to where it was broken through by the eastern end of the buildings of the Great Hall, an unusual discovery was made. On the inner side of the wall, just below the level of the inner plinth of three tiles, was a flooring of large Roman tiles laid on a bed of puddled clay 1 ft. thick. It ran from the face of the wall for 10 ft., but its extent in line with the wall was not possible to ascertain, as it had been broken away in both directions, only about 2 ft. or 3 ft. in width remaining. It was covered with brick-earth to a height of 3 ft., which was the height of the remaining portion of the Roman wall. In all probability this had belonged to some building standing before the erection of the wall.

There is reason to believe that the wall remained in tolerably perfect condition before the building of the Great Hall by Shaw in 1825-9, and in some of the adjoining buildings at the east end he did not take the trouble to have it removed.

Several considerable fragments were found incorporated in the foundations of these accessory buildings. Under the hall itself the only indication of the wall was a large block of it, including part of a tile bond, which had been tilted on its side and used as a ledger stone in the footings.

1. MIDDLE BASTION, SITE OF CHRIST'S HOSPITAL LOOKING SOUTH-WEST

2. SECTION OF ROMAN CITY WALL, SITE OF CHRIST'S HOSPITAL, ADJOINING KING EDWARD STREET

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The Middle Bastion.

The west end of the trench, which had been carried along the course of the Roman wall, about coincided with the west end of Shaw's Great Hall. This had been demolished, but the strong brick footings remained and had been carried 17 ft. 6 in. into the ground. It seemed evident therefore that, so far as the space which the main building had occupied was concerned, no part of the city wall was likely to be found. Some surprise was therefore felt when the workmen came upon massive masonry, almost filling one of the compartments formed by the footings of the walls of the Great Hall, and lying immediately below them.

The great depth at which it lay buried beneath the surface at first led us to think it improbable that it could in any way have been connected with the wall, the base of which, in other parts of the site, was generally about 12 ft. below the modern ground level. It was, however, soon apparent from the form of the masonry and its position that we had come on the base of the bastion which was known to have stood near this site.

The discovery being important, we induced the contractors to leave the destruction of the masonry until the soil had been removed. This masonry, on being cleared of the rubbish, was found to be a wall, 5 ft. 6 in. in thickness, of horseshoe form, enclosing a hollow space 13 ft. wide (plates XLVIII, fig. 2, and XLIX, fig. 1).

On further uncovering these remains, we found that the original soil on the exterior had already been removed at the time of the building of the Great Hall, and refilled with builder's rubbish. The interior was undisturbed, and consisted of black mud in the upper part, and layers of sandy mud and washed clay below.

The masonry continued for a depth of 5 ft. 6 in., when it ended abruptly, without any splayed footing, resting in the soft soil, of which there was another 3 ft. or 4 ft. before firm ground was reached. Beyond a few fragments of Roman pottery, nothing was found in this interior filling.

It seems probable that Shaw destroyed a large portion of the upper part of this bastion. After having reduced it to the level of his footings, he was content to build over it, and only interfered further with the remains by cutting through the masonry at the front in order to carry down a brick pier, which he underpinned beneath the ancient stonework, but still without reaching solid soil. In fact, Shaw would have done better to have built directly on the old masonry.

Both the original builders of the bastion and the designer of the hall found themselves faced with some difficulty in dealing with this 'soft spot'. Why it should have been selected for erecting the bastion is not easy to see, as at a little distance either way the builders would have found firm soil at a few feet from the

surface. Here, apparently, after digging to so great a depth for their footings, they gave up hope of any improved conditions in such soil, and relied on the hollow form of construction for stability.

Shaw met with the same difficulty, but to an aggravated extent, as the bad soil was found to continue southwards from this point right across the site of the hall, filling a deeply cut channel, which was in fact an ancient stream-bed. To deal with this, Shaw drove into the mud a number of massive piles

Fig. 12. Piles beneath the Great Hall, Christ's Hospital.

of beech. These when uncovered were found to be in wonderful preservation, and presented the appearance of a veritable forest.

There is little record, so far as we are aware, of what was discovered during Shaw's building, but Timbs, in his *Curiosities of London*, p. 97, makes the following reference: 'The refectory of the monastery originally served as the dining-hall of the Hospital: after the great Fire, the hall was rebuilt: this was taken down, and partly upon its site, and partly on the ancient City wall, was erected a vast edifice in the Tudor style by John Shaw, F.R.S., F.S.A., architect: the first stone was laid by the Duke of York, April 25th, 1825. The back north wall stands on the site of the ditch that anciently surrounded London, and is built on piles driven 20 ft. deep: in excavating for the foundation there were found some Roman arms and coins, and some curious leathern sandals.' Timbs was evidently unaware of our channel.

As the digging continued we were able to trace this ancient channel across the Hospital site, through which it flowed with a bold curve to the south. All the lower part of the filling south of the hall was quite undisturbed, and it was

clear that this stream had cut its way through the covering of brick-earth into the gravel to a depth of 30 ft. from the present surface. A little sand formed its base, but the filling generally was very black mud, which had gradually choked up the channel, filling it to the level of the brick-earth, where it was of an average width of about 50 ft. There were plentiful remains of reeds and rushes, and it was evident that this stream had long remained open, although its flow was checked for a considerable part of the Roman period. All the relics noticed in the lower part of the filling were Roman, and these consisted of many fragments of Samian and frilled ware, and the commoner black and grey pottery. Two horseshoes of the sinuous type were found, which were said to have come from low down in the filling. These were taken away, but we succeeded in recovering one which is coated with vivianite (pl. LXIX, fig. 4).

A curious little black pot, found in this mud deposit, also came into our hands, but we were unable to ascertain its position. It is of doubtful origin; the cordons with which it is ornamented suggest the Late Celtic period, but it is hand-made, and otherwise seems too crude. Mr. Reginald Smith says that it possesses Merovingian characteristics, and this suggests a more possible date for it in some respects.

The removal of a large quantity of this black mud was carefully watched by us, but in the lower part we saw nothing but Roman pottery fragments and a few pieces of bone plates with ring and dot ornament (pl. LXIX, fig. 8). The upper part had been much disturbed in later times, many chalk foundations of medieval walls having been laid in it, so that it afforded no evidence as to the age in which the stream was finally filled in.

The further course of this stream lay under Newgate Street, 150 ft. east of the gate. It was perhaps joined by the stream previously noticed, and may have turned into the Fleet or run southwards into the Thames.

Many interesting questions are raised by the presence of such considerable streams in this part of the city, such as whether they were still flowing when the wall was built, and whether provision was made for their passage through the wall by means of culverts, as in the case of the Walbrook.

Unfortunately, the evidence which would have thrown light on these points was destroyed by the builders of the Great Hall. There are reasons, however, for concluding that they had previously been stopped, and perhaps diverted, for had the builders of the wall followed the same method as with the Walbrook they would have carried down their foundation to the base of the stream, which would have been an even lower level than that to which the bastion had been carried. Had such a structure been formed we should undoubtedly have found it, as no disturbance had taken place at this depth. Moreover, had the stream been blocked up from this cause, the soil on the outside would have been river

silt, and not black mud similar to that with which the hollow of the bastion and the further course of the bed were filled.

We may reasonably conclude, therefore, that these streams were already filled up when the wall was built, and that the builders contented themselves with a foundation of piles and chalk, as they did at a soft spot adjoining Aldgate, recorded by Loftus Brock, and also as was done in the case of the later riverside

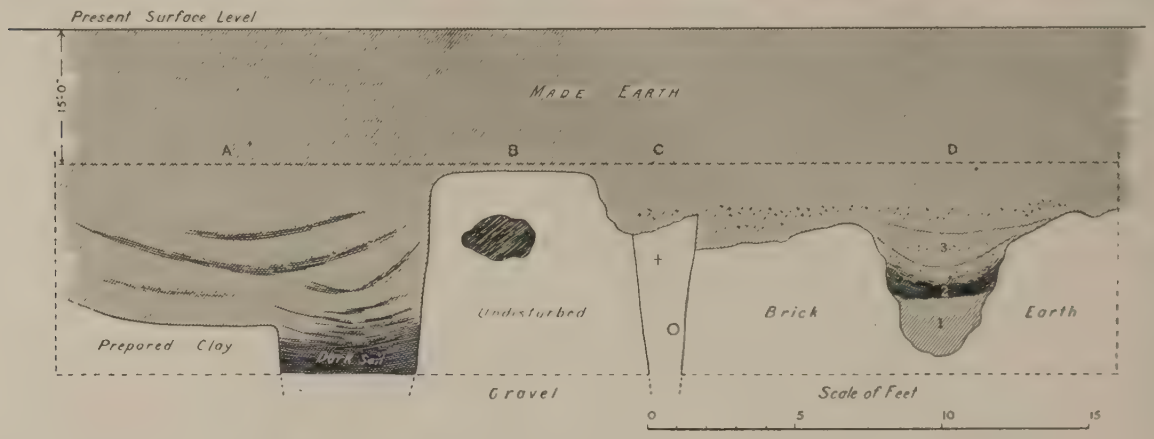

Fig. 13. Section of Roman Pits A–D. Site of Christ's Hospital.

A—A large pit which had served to contain prepared clay, and in the lower part of which a large quantity remained, but some of it had been dug out on one side and its place was occupied with black soil containing organic matter. It appeared to have lain open for a considerable time, during which water collected in it and stagnated as it gradually filled up. The filling of the upper part was soil of a sandy nature, in which were bands of burnt clay. It contained several fragments of Roman pottery and tile, also some oyster-shells.

B—The end of a pit or flue, the main part of which had been cut away. This end extended only 9 inches into the section and was completely filled with wood-ash.

C—The side of a pit, most of which had been removed in cutting the trench. The filling, of which only a few inches remained in the side of the section, was a fine light sand. In this was a portion of a glass bead (pl. LXIX, fig. 6), and near the bottom was part of an ivy-leaf Samian patera. There were also several fragments of Romano-British pottery, glass, tile, oyster and mussel shells, and animal bones.

D—A pit in the bottom of which was light sand, this being covered with black soil, over which was a layer of burnt clay of a bright red colour. Above this, extending as far as C, was made-earth in which was another distinct layer of burnt earth. Roman pottery occurred throughout the filling.

wall. Under these circumstances, the wall would have been specially liable to decay at this point, and the bastion might therefore have been erected here in order to give it support.

There is also the question of the crossing of such a stream or streams by the Roman road, if one existed in early Roman times on the line of Newgate Street. Later there is no doubt that the Romans had a road here, as is shown by the remains of the gate found years ago, about which further evidence will be given presently. It can be seen by what has come to light that this gate was constructed considerably later than the wall, and by this time there is little doubt that the streams had been filled up and the ground levelled. We have no proof of a gate of the age of the wall in this position; it is, however, quite probable that there was one, but that the rise in the surface necessitated its reconstruction.

The road may even have existed before the walling of Londinium, in which case these streams were probably bridged. The evidence of this may yet be buried beneath Newgate Street.

It seems almost certain that this portion of the city was not much inhabited, remains of buildings being few and far between. To the north of Newgate Street no indication of a habitable building has been recorded, with the exception of the tile pavement already mentioned above, on the site of Christ's Hospital.

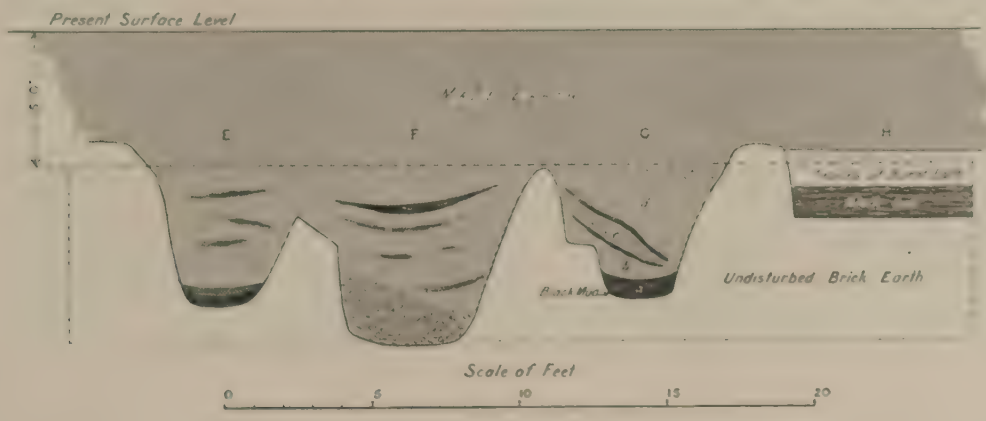

Fig. 14. Section of Roman Pits E–H. Site of Christ's Hospital.

E—Pit filled mainly with dark mould in which were layers of very black earth.

F—A pit similar to E. The partition between these two pits had been broken down at the top and the filling of the upper part was identical with that of E. The lower part was filled with oyster and other shells, to a thickness of about 2 feet.

G—Pit with a step on one side. (*a*) Black mud; (*b*) Brick-earth; (*c*) Light sandy soil with bands of black earth on each side; (*d*) Dark mould having traces of burnt earth in the upper portion.

H—A shallow pit having black soil at the bottom, the upper part being lighter soil and burnt earth.

A considerable quantity of Samian and other pottery fragments of the Roman period were found generally throughout the filling of all these pits.

Throughout the precinct, however, the nature of the Roman relics scattered about seems to show that it must have been occupied early.

A considerable portion of the Roman level was found quite undisturbed in the south part of the site between the two streams and to the west of the churchyard. It had stood high and dry above the water, though at a depth of 13ft. to 14ft. below the present level. It had evidently been used as a brickfield, and in places the surface had been burnt red to a depth of about 1ft. where the clamps had stood. One of these had been cut square 2ft. into the brick-earth, and here there was about 1 ft. of black soil, mixed with which was a quantity of charcoal, while the upper part was all red burnt earth. There were many pits also which had been dug to obtain the material, and one contained a quantity of prepared clay which had been dug out on one side, while some of them contained fine sand. Most of these pits had been filled with rubbish. A layer of oyster-shells filled the bottom of one pit for a thickness of about 2 ft., while quantities of burnt earth and charcoal

were found in the filling of most of them. We were unable to watch this spot as carefully as we should like to have done, owing to the method of the excavation, but during stoppages in the work we were able to obtain two characteristic sections at different stages of the cutting back of the soil (figs. 13 and 14). In the face of one of these was a hole 2 ft. 6 in. wide, completely filled with wood-ash. This was the end only of something that had been cut away before we were able to observe it, and may have been a flue. Roman pottery fragments, portions of tile, and animal bones occurred freely.

The Angle Bastion (3).

The requirements of the new Post Office buildings did not necessitate the excavation of the whole site, a large portion at the extreme west being intended for a yard, and therefore lying undisturbed. This part contained the angle of the Roman wall where, ceasing to run east and west, it turned south to Newgate, and on the point of this angle we knew that there had been a bastion, remains of which were almost certainly still in existence. On Braun and Hogenburg's plan (1572) the bastion appears with a conical roof, while in 1677 Ogilby and Morgan show it still probably above ground but obscured by a small structure to the north, with others against the adjoining city wall on the inside. No important building, however, seems to have been quite close to it at any time except the Compter, at the east corner of Newgate Street and Giltspur Street, designed by Dance in 1791; and we did not think that this had actually touched the bastion.

Here was a chance that would never occur again of throwing light on a vexed question. Having therefore obtained leave from the Government, and the promise of a grant from the Society of Antiquaries, we determined if possible to excavate whatever might be left on this site, and the results of our effort will now be described. The normal depth of the original surface on the site generally had not been more than about 12 ft. to 14 ft., so it appeared probable that there would be no special difficulty in the undertaking.

With light hearts we began the work on the 17th March, 1907, fully expecting to find both our bastion and the wall lying intact a few feet below the surface. After careful calculation and measurement a trial-hole was sunk 84 ft. east of Giltspur Street, and 66 ft. north of the backs of the buildings in Newgate Street, in a position which we felt sure would touch some part of either structure. But to our disappointment, after passing through several layers of asphalt which had formed the surface of the playground, we met with nothing but builder's rubbish for about 10 ft., and, by probing, this was found to continue several feet deeper. It then seemed that the Compter buildings had extended so far in this direction as to cause the entire destruction of the bastion. In the hope of at

1 CHRIST'S HOSPITAL SITE, LOOKING WEST, SHOWING ANGLE BASTION EXCAVATED

From a drawing by P. Norman

2 INTERIOR VIEW OF ANGLE BASTION, SITE OF CHRIST'S HOSPITAL

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least finding the city wall another trial-hole was dug, more to the north. Here we soon came on some small brick walls in ordinary made-soil, and beneath these were other brick walls in black marshy mud, which indicated buildings of rather late periods.

As digging was difficult at this spot on account of the walls, we decided to try again at a point about midway between the two trial-holes. This time our efforts were better rewarded, for having struck a point between the builder's rubbish and the made-earth, at a depth of about 8 ft. we came on some rough masonry, which on being cleared was found to consist of ragstone and a bond of tiles. It was soon apparent that we had hit on the city wall, which had here been broken through. Following this to its external face, we found built against it a mass of rubble masonry rising to within 4 ft. of the surface, to which level the Roman wall also rose as we proceeded.

Judging from our general knowledge of bastions, we fully expected that this would have been solid at the base, and concluded therefore that we had come upon its southern side, and that after all only a portion of the city wall could have been destroyed by Dance's prison. Our hopes of finding the bastion intact grew as we followed this masonry, which ran straight for some distance westwards, and we expected it to curve round to the north. To our surprise we soon found that it went in the opposite direction. After clearing the top it proved to be a wall 7 ft. in thickness, which had formed a hollow bastion like that we had previously found near at hand to the north-east, which we had regarded as exceptional.[1] Its north side and the greater part of the curved front were practically intact, and the top of all the remaining portion lay at a depth varying between 5 ft. and less than 4 ft. below the surface. The south side had been wholly removed, together with a portion of the city wall, for the prison foundations. At the demolition of the Compter it would seem that these foundations were rooted up for the material, and the space they occupied had been refilled with light builder's rubbish, consisting for the most part of loose mortar. Fortunately, the greater part of the core of earth forming the interior of the bastion had escaped destruction or any disturbance.

Although only a part of the bastion remained, the task of excavation was a formidable one, for it turned out to be much larger than the ordinary bastions, extending 26 ft. in advance of the wall, which is considerably more than any of those hitherto recorded. That at Camomile Street only measured 14 ft. 9 in., All Hallows Church 14 ft. 6 in., or with the plinth 16 ft., while the other hollow bastion at Christ's Hospital was 18 ft., and the most easterly on this site 15 ft. 8 in. Not only did the great superficial area of this structure necessitate the digging

[1] On again referring to Mr. Fox's account of the bastion at King Edward Street, although he does not specially say so, it appears that this was also hollow at the base.

out of much material, but as the work progressed we found that the masonry was carried to an abnormal depth, which of course added to the expense and labour.

The city wall was of the usual character, but its line took a decided curve, showing clearly that it had here formed the rounded angle often characteristic of Roman defensive walls, for example of those at Rochester. This forms the first instance that has been recorded in London, although doubtless a similar angle existed, and perhaps still remains underground, at Cripplegate Churchyard.

At a depth of 12 ft. the red sandstone plinth rested on a normal thickness of substructure, which was laid not on the original surface, as is the case at all other parts of the wall that we have seen, but on a great accumulation of made-earth. Beneath the wall, instead of the usual 2 ft. or 3 ft. of flint and clay puddling, we found that the made-earth had been dug through for a depth of upwards of 6 ft., passing into the gravel, and had then been filled up with pieces of ragstone tightly packed and set in clay.

The nature of the original level was difficult to follow definitely, but it was evidently an uneven hollow spot, and very wet. Although there were no actual traces of a stream, the surface, which was found to be partly of gravel and brick-earth, appeared to have been subjected to frequent flooding, and was furrowed and worn by runnels, like land close to a stream. The builders of the wall appear to have considered that the difficulty of dealing with this hollow, sloping ground could be simply met by levelling up the surface with rubbish, instead of building a rough substructure to the height of the average level, as they did in crossing a stream bed. This seems to have overcome the difficulty so far as the inside of the wall went, the soil having the usual light, dry appearance of ordinary made-earth. On the outside things were very different, and it was evident that, in spite of much filling up of the hollow, wet and marshy conditions prevailed until a fairly late period. Much of the soil was black with organic matter, and resembled very closely the filling of the later city ditch, but no distinct traces were observable of the ditch having been cut here.

The outer face of the Roman wall bore evident marks of water having stood against it for a protracted period, by which it had become deeply stained and coated with iron deposit. On removing this it was seen that the whole face of the wall had been pointed with pink mortar. As we have previously remarked, pink mortar was not originally used in the wall except in the case of water tunnels. If therefore this mortar was applied at the time the wall was built, it may have been on account of the wet nature of this spot. More likely, however, it was a later addition, when the bastion was added to the original structure. In spite of extra foundations the wall at the angle on this wet spot had evidently given way, as it was badly cracked and was leaning over a good deal to the west.

ANGLE BASTION FROM INSIDE OF CITY WALL. SITE OF CHRIST'S HOSPITAL.

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These defects had clearly occurred before the building of the bastion, which therefore acted not only for purposes of defence but as a buttress.

In the upper part of the soil outside were many later brick walls, like those met with in our second trial-hole. One of them was built partly on the bastion, close to its junction with the city wall. It formed a semicircular chamber with a brick floor, which had been simply laid on the black mud, and was 8 ft. below the surface. A quantity of sawn plates and shavings of bone were found on this floor, suggesting that the building had been a workshop. There was nothing to fix its age definitely, but from the character of the bricks it may have belonged to the seventeenth century. In the mud beneath were many fragments of seventeenth-century pottery. Several larger brick walls were found in front of the bastion, some at a depth of 3 ft., others being carried to a depth of 7 ft. to 9 ft. Below these, at the western limit of our excavation, we laid open a brick sewer, apparently of the seventeenth century and resembling that found at Newgate and elsewhere in the line of the city ditch. Its base was here 12 ft. 8 in. below the present ground level. At this point there were indications which looked more like those usually found in the city ditch than at any point nearer the wall, but the main part of the ditch would no doubt lie beyond to the west towards Giltspur Street.

Beneath the brick sewer, and directly in front of the bastion, the soil had strongly the appearance of a stream bed; it was of a more gravelly nature, and fell to a greater depth at the north-west, where it went down about 21 ft. Here the lower part was a darkly stained river ballast, and contained Roman pottery only, several fragments of Samian ware lying at the base, and it was covered by a layer of clean washed sand. A small portion only of this stream bed was opened up by our trench, and from the way in which its sides rose, both towards the bastion and in the direction of the wall, it appeared that here the stream turned abruptly. The edge of the bastion just extended over its side, the slope of which was followed by the bastion builders, who carried their wall down until the original gravel was reached. In consequence, the external face of the bastion is there deeper by 2 ft. than the interior, showing the steepness of the bank of this stream. Towards the south-west, where the bastion was cut away, the surface rose rapidly about 5 ft., and consisted of brick-earth.

The core of earth filling the interior was naturally regarded as likely to throw light on the period when the structure was erected, and was therefore dug in spits, and very carefully watched. Only in one part had there been any later disturbance; this was in the form of a small well or sump hole, which went down only about 12 ft. below the surface. It was filled with dark material, easily distinguished from the regular soil, and contained several portions of

the jugs known as greybeards or bellarmines, a black-glazed tyg, and other wares of the sixteenth or seventeenth centuries.

Apart from this, all the soil below a level of 10 ft. from the present surface was of one description, and contained only Roman objects. The upper part had evidently been thrown up by the bastion builders from the trench dug for the masonry. It was mostly brick-earth, with patches of gravel like that occupying the stream bed. There was also a large quantity of building material, consisting of masses of *opus signinum*, which had formed flooring, pieces of ragstone, many with red mortar adhering to them, broken roofing and other tiles. The lower portion was the natural brick-earth, but it had undergone alteration. Patches of black mud, in which were pieces of birch and other wood, represented hollows in the natural surface, which had been filled with water and vegetable growth. These had been successively covered up with fresh deposits of brick-earth, in the surface of which similar pools had formed. Here objects were scarce, but a few pieces of Roman pottery occurred. A large variety of pottery fragments was found in the upper part, also a bone pin with round head, a shapeless piece of bronze, some iron nails, and animal bones.

Unfortunately there were no relics of importance, but the large quantity of undoubted Roman remains and the absence of anything definitely later form very strong evidence as to the date of the bastion. Many of the relics were probably lying in the surface soil when it was erected, but the bulk of the building material was no doubt rubbish of the period brought from elsewhere. Although Roman buildings may have been standing in London during the early middle ages, one can hardly believe that if this rubbish were then deposited not a scrap of anything to indicate this later period should have come to light. Taken in conjunction with the evidence found elsewhere, it helps much to support our conclusion that not only this but the other bastions generally were added to the wall during the Roman occupation.

No sign of the original Roman ditch was found either within or without the bastion, which is hardly surprising considering the conditions. With a stream flowing so close to the wall it is probable that there was no regular ditch here, but even if there had been we can easily understand how all trace of it might be obliterated in a surface so liable to flood and the resulting changes. When the bastion was built the stream had to a large extent filled up its bed, and by degrees marshy ground replaced running water, but owing to the way in which all but the lowest levels had been cut into and disturbed in later times the external soil was not easy to classify with certainty.

As regards the masonry, it has no distinctive characteristics. It is merely rubble work, composed of rather small irregular pieces of ragstone, the interstices between them completely filled with good white mortar, and is such as might have

1. Angle bastion, interior front

2. Junction of angle bastion with Roman city wall

SITE OF CHRIST'S HOSPITAL

Published by the Society of Antiquaries of London, 1912

1. ANGLE BASTION, EXTERIOR, LOOKING EAST

2. EXTERIOR OF CITY WALL AND ANGLE BASTION

Published by the Society of Antiquaries of London, 1912

been erected at any period. No carved or apparently re-used stones, such as occur in most cases, could be seen, neither was pink mortar employed. The internal face was somewhat irregular and unpointed, with all the appearance of having been built against the core of earth. The outer face, however, was carefully pointed and smoothed. Externally it must have been built in the open, even if the lower part was ultimately covered in. There was no splayed footing, the masonry being carried quite straight up to a level of 6 ft. below the present surface. In plan it was of the horseshoe shape, but flattened considerably on the west front.

From 6 ft. below the present ground surface upwards an alteration was made both in the shape and thickness of the masonry, its width being reduced to 5 ft. 6 in., and being set off irregularly on both sides, chamfered externally, and having a set off within. Of this upper portion on an average not more than a height of 2 ft. remained. It took a more rounded form in plan, but was less symmetrically built than the lower part. Both stages appeared to be continuous work of the same period.

The great diversity shown by the different bastions is in striking contrast with the city wall against which they are built. It is evident that the wall was carried out on a well organized and uniform system, all the material being specially quarried and prepared, while it exhibits no important variation throughout its entire length. The bastions, on the other hand, appear to have been built quite independently, the constructors following their own ideas in each case, according to the conditions encountered, and using any material which came easiest to hand. In two particulars only are they more or less uniform. They are all of horseshoe shape, and built merely of random rubble, having no courses of bonding tiles.

It is true that Dr. Woodward mentioned 'a tower at Houndsditch composed of stones with layers of brick interposed after the Roman manner'. Gough has left a sketch of what we may accept as the same structure, which was redrawn by Fairholt, and published by Roach Smith. It appears to be rectangular, or at least with flat sides and front, the latter having brick courses. If drawn accurately the bricks were much thicker and shorter than the bonding tiles of the wall, and they may have been part of a late alteration. Be this as it may, there is very strong evidence that in the sixteenth and seventeenth centuries, perhaps later, the bastion on this site was semicircular or more likely of horseshoe plan. This evidence is given in the Appendix.

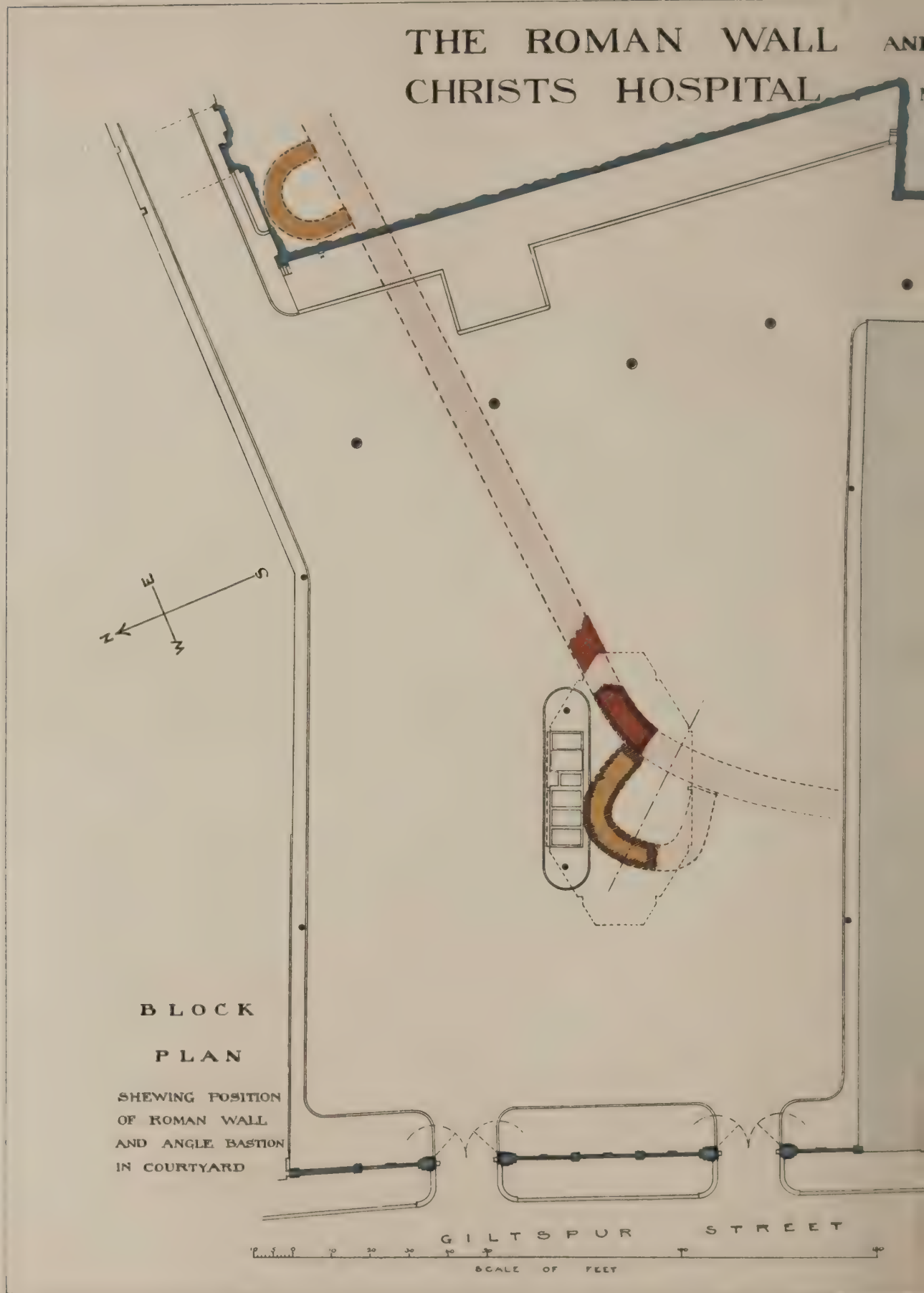
So far as we can gather from the accounts of others and from our observation of those we have been able to examine, all the bastions appear to have been erected about the same period, and the only definite evidence points to this having been during the Roman occupation. Satisfactory proof of this has been procurable only in few instances, but we hold that in none of them has

there been any evidence warranting the supposition that they are of later foundation, though like the wall they were doubtless largely repaired in later times, some of them perhaps rebuilt from the then ground level. The possibility that some at least were medieval additions has always been present in our minds, and this has indeed been forced on us by former observers, whose efforts have been so readily directed in the attempt to show that not only the bastions, but even

Fig. 15. Camomile Street Bastion. Discovered 1876.

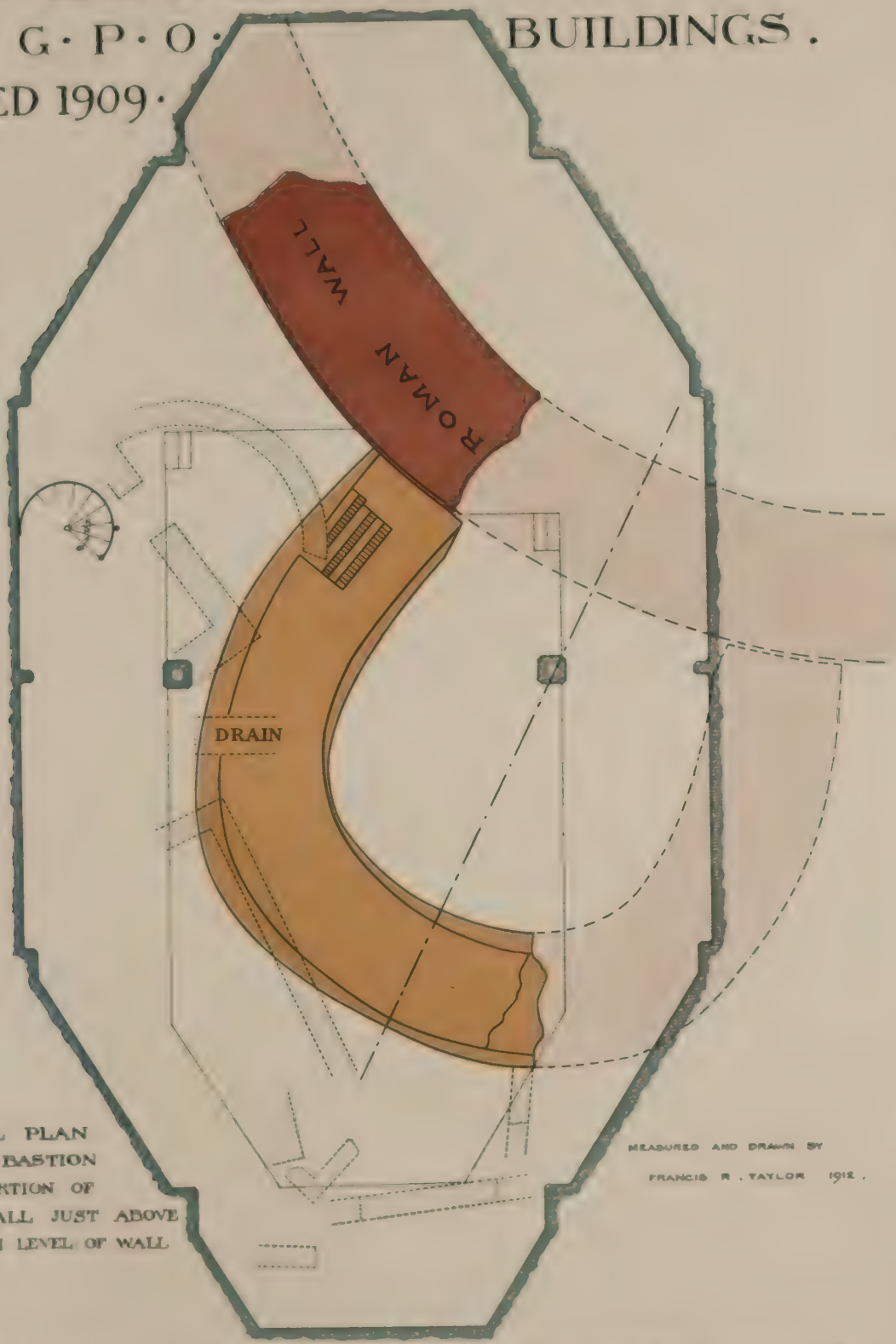
the wall itself, were post-Roman. To this end J. E. Price seized on a fragment of green-glazed pottery said to have come from under the bastion in Camomile Street.[1] We here reproduce a photograph of this bastion (fig. 15) taken at the time of its discovery in 1876, but not hitherto published. It is probably unique and gives proof of the extent to which sculptured stones were often employed in these structures. Price himself admits that the presence of the pottery is not

[1] *On a Bastion of London Wall*, by J. E. Price, 1880, p. 26.


THE ROMAN WALL AN
CHRISTS HOSPITAL
E
S
N
W
BLOCK
PLAN
SHEWING POSITION
OF ROMAN WALL
AND ANGLE BASTION
IN COURTYARD
GILTSPUR STREET
SCALE OF FEET

ANGLE BASTION ON THE SITE OF THE G·P·O· BUILDINGS.

CAVATED 1909·

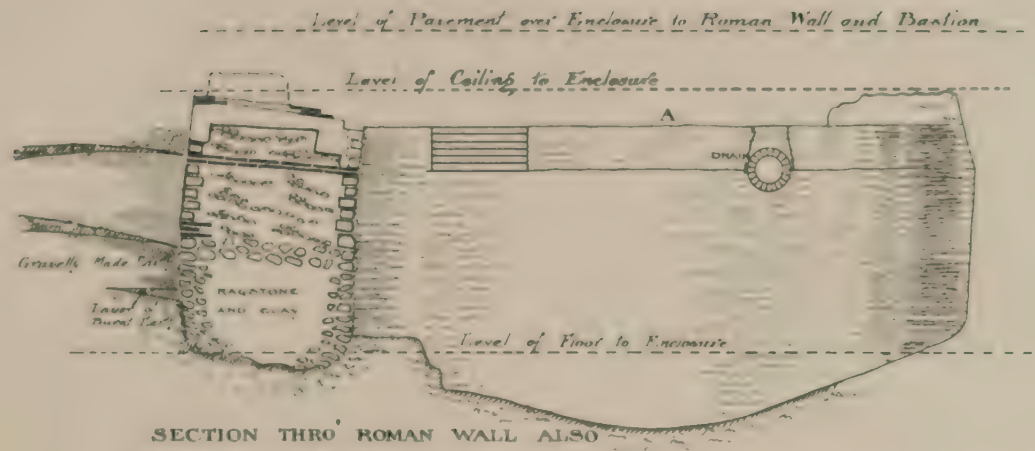


SECTIONAL PLAN OF ANGLE BASTION AND OF PORTION OF ROMAN WALL JUST ABOVE THE PLINTH LEVEL OF WALL

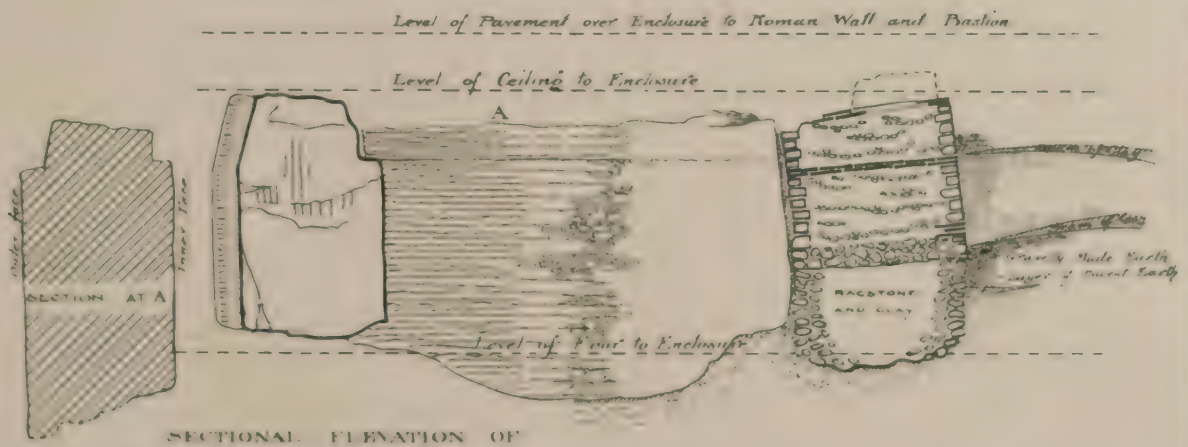
MEASURED AND DRAWN BY FRANCIS R. TAYLOR 1912.

SCALE OF FEET

THE ROMAN WALL AND ANGLE BASTION CHRISTS HOSPITAL NOW THE G.P.O.

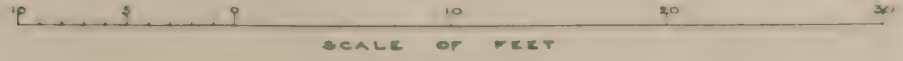

Level of Pavement over Enclosure to Roman Wall and Bastion
Level of Ceiling to Enclosure
A
DRAIN
Gravelly Made Earth
RAGSTONE AND CLAY
Level of Floor to Enclosure

SECTION THRO' ROMAN WALL ALSO EXTERNAL ELEVATION OF BASTION.


Level of Pavement over Enclosure to Roman Wall and Bastion
Level of Ceiling to Enclosure
A
SECTION AT A
RAGSTONE AND CLAY
Level of Floor to Enclosure

SECTIONAL ELEVATION OF ROMAN WALL AND BASTION.

MEASURED AND DRAWN BY FRANCIS R. TAYLOR. 1912.



SCALE OF FEET

Published by the Society of Antiquaries of London, 1912.

decisive, as green-glazed ware was also manufactured in Roman times, but he does not make it clear to which period the fragment in question belonged. Even supposing this to have been medieval, as he seems to suggest, it is well known to all explorers that an occasional object from a higher level will accidentally find its way downwards, even when an excavation is conducted with great care. Against the sum of evidence something more than a fragment of pottery should be produced before a medieval origin can be assigned to the bastions.

G. E. Fox dismissed as medieval the bastion referred to in a previous note, the site of which is now under a projecting portion of the General Post Office on the east side of King Edward Street, because it contained carved stones of the Norman and Early English periods. This may no doubt have been the case with the upper part of most bastions which were re-built or repaired, but it is no evidence as to the original structure. These stones unfortunately do not appear to have been preserved, while there is nothing to show that the base of this example was examined with any care.

All that remains above ground of the bastion in Cripplegate Churchyard is undoubtedly medieval or later, but the base may well be of early origin. Mr. Terry's[1] report of the repair is not conclusive; he says, however, that the masonry at the base is of a different character from that above, and speaks of it as Roman.

The excavation of the angle bastion was completed in the course of the summer of 1909. In accordance with the original intention, the eastern portion of the site of Christ's Hospital having been built over, a considerable open space containing the angle bastion was converted into a yard. It was pointed out to H.M. Government that this impressive piece of ancient fortification was of great value as an object-lesson to all those who take an interest in the early history of our great city, and that it should be preserved. The appeal was generously responded to, and the bastion, together with the adjoining piece of Roman wall, is now enclosed in an underground chamber about the centre of the yard, not far from the Giltspur Street entrance to the precinct. We hope that for all time it may be accessible to the student of London antiquities. In the chamber is a plan of the bastion and another showing the course of the Roman wall of London, which embodies all the latest discoveries.

A good idea of the exact position of this unique relic can be obtained by glancing at our bird's-eye view, looking west from the top of the extension of the General Post Office (pl. L, fig. 1). The churches shown in the mid-distance and distance are respectively those of St. Sepulchre and St. Andrew, Holborn. We take this opportunity of thanking the authorities of the Office of Works and

[1] *London and Middlesex Arch. Soc. Trans.*, n.s., vol. i, p. 357.

of H.M. Post Office for their enlightened action, and for their kindness during the progress of our work.

Mr. W. Lempriere has been good enough to supply us with notes (see Appendix I) from the minute books of Christ's Hospital, relating to the disuse and demolition of the Giltspur Street Compter. They are of interest as showing how this part of the site, after having been alienated for many years, again passed into the possession of Christ's Hospital, and was converted into a playground.

Newgate.

The Western Gate Plinth. At the beginning of August, 1909, our attention was drawn by Mr. C. E. Mason, who helped with the paper about Newgate,[1] to the fact that telephone wires were being carried along Newgate Street over the site of the former gate. The trench was a very narrow one and cut in the roadway a few inches from the northern pavement. Some 4 ft. 6 in. below the street level the top of a chamfered plinth was discovered, which Mr. Mason contrived to photograph. In form it was like that found at the south-east corner of the gate in the autumn of 1903. Behind it was a rough-faced block of iron-stone. The levels agreed enough to be practically identical, but the material resembled Kentish ragstone, rather than the yellow oolite found previously. The view, done under such difficult circumstances, is naturally rather imperfect, but of much value as a record. We here reproduce it (fig. 16).

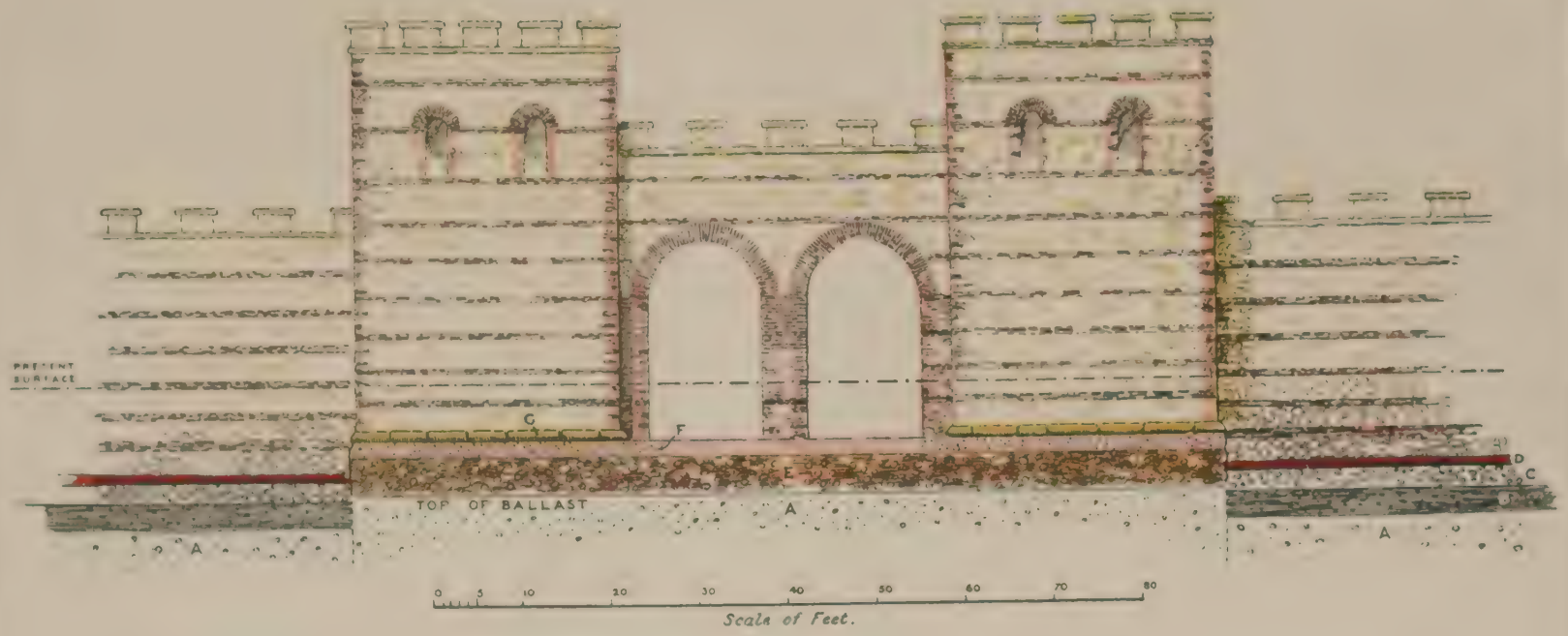
Fig. 16. Western Plinth, Newgate. Discovered 1909.

Taking a point on the north side of Newgate due north of the eastern face of the former plinth, and measuring from there to the outer face of this western plinth, we found that the Roman gate must have been rather more than 31 ft. from east to west. Comparing the two plinths, that of the western front was 11 in. in height at the north end, and 12 in. at the south: a length of 2 ft. was exposed. The oolite plinth facing east was 13 in. high. Under the ragstone plinth came 4 ft. of ragstone and yellow

[1] *Archaeologia*, vol. lix.

PLAN OF ROMAN GATE, NEWGATE.

Published by the Society of Antiquaries of London, 1912.



A. *Gravel and brick earth* B. *Flint and Clay under City Wall* C. *Substructure, City Wall.*
D. *Plinth, City Wall, red-sandstone* E. *Clay and ragstone under Gate* F. *Mortar and pounded tile.*
G. *Plinth, Gate, Barnack and Kentish rag.*

F.W.R.

ELEVATION SHOWING RELATIVE LEVELS OF CITY WALL AND ROMAN GATE PLINTHS, WITH A CONJECTURAL RESTORATION OF THE GATE, NEWGATE.

Published by the Society of Antiquaries of London, 1912.

mortar, with a piece of chalk here and there, and then ragstone and clay, 2 ft. 2 in. to the bottom of the excavation, which was 11 ft. 6 in. from the road surface. The arched subway, already described and figured in the account of Newgate, was cut into about 5 ft. to the west of the western plinth, just where we expected to find it. Both plinths were built over with medieval masonry and both were tied with iron clamps, one joint only being laid bare on the west side.

This newly discovered plinth fits very well into the conjectural plan, which accompanied the paper describing the previous find.[1] We here repeat this plan (pl. LVI), to which has been added the exact position of the recent discovery, and also some pieces of wall which are drawn on Loftus Brock's plan.[2] There appears to be enough evidence of their Roman origin. We also give an elevation of the gate (pl. LVII), the upper part being entirely conjectural; but the chief object of this is to show the relative heights of the gate plinth and that of the earlier Roman city wall.

The Old Bailey. Site of Central Criminal Court.

Passing from Newgate, the Roman city wall takes a direct course to Ludgate. A considerable piece of it found during excavations for the new Sessions House in 1903 was described in the paper on the Roman Remains at Newgate, already alluded to.[3] South of this, its exact line has been a matter of some doubt, but it was naturally supposed to be marked by the large wall which bounds the west side of Amen Court. On the demolition of the Old Bailey Sessions House, or Central Criminal Court, in 1907–8, excavations took place in the Old Bailey, which exposed the foundations of the Roman wall. A portion of this site to the north was converted into a yard for the new Sessions House, while on the southern part a block of offices was built known as nos. 7, 8, 9, and 10 Old Bailey. These offices extend as far as the southern limit of Amen Court, being bounded on the south by a linoleum warehouse built in 1896. Throughout this site the original base of the wall was exposed to view, and we were able to ascertain that although it followed a parallel course, the wall bounding Amen Court was quite distinct from the city wall, being separated from it, at least at the lower end, by a space 7 ft. in width.

The city wall above ground had long been broken down, except a detached part involved in buildings which escaped destruction until 1885. This was reported on by J. E. Price,[4] who gives a sketch of it showing the Roman work to a considerable height. It possessed a curious variation from the rest of the wall in the sparing use of tiles in the bonds. Although the buried

[1] *Archaeologia*, vol. lix, pl. xiii.
[2] *Journ. Brit. Arch. Assoc.*, vol. xxxi, p. 26.
[3] *Archaeologia*, lix. 125.
[4] *Antiquary*, xii. 96.

portion seen by us only existed as high as the first bonding course, we were able to observe the same peculiarity, which appeared more or less throughout all this stretch. In parts there were three tiles on the face, but only a single layer was carried through the wall, while elsewhere no effort had been made to disguise the paucity of tiles, two courses or only one being on the face. Perhaps the supply of tiles had run short when the builders reached this point. Although elsewhere two or three courses are used indifferently in the bonds of the wall, we have never before seen fewer tiles in the core of the wall than appeared on the face; but occasional instances have occurred where the number has been increased.[1] The damp course of puddled clay, however, contained besides the usual flints a quantity of ragstone and many pieces of broken tiles, probably the results of waste in manufacture or transit.

The wall seen from Amen Court is probably the precinct wall of old St. Paul's, which was built in the early part of the twelfth century. Stow tells us[2] that Richard Beames or Beamor, who succeeded Mauricius in the bishopric of London A. D. 1107, 'did wonderfully increase the said Church, purchasing of his owne cost the large streetes and lanes about it, wherein were wont to dwel many lay people: which ground he began to compasse about with a strong wall of stone and gates.'

The present ground level of Amen Court is about 12 ft. higher than that of the Old Bailey, and little of the original boundary wall is to be seen from the city side, on account of its being for the most part buried. A modern brick wall now stands upon the earlier structure. On the Old Bailey side, this wall, although above ground, was obscured by buildings which from time to time had been reared up against it. In places, several successive walls had almost filled up the space between the city wall and the boundary wall, the whole forming a confused mass of masonry denoting many periods. These walls were removed, but not below the ground level of the outside of the city, so that little of the original boundary wall became visible. As far as we could see it consisted mostly of ragstone, but its foundation was not disclosed.

At the present time this wall extends as far as the backs of the houses on the south side of Warwick Square. Whether the original wall ran thus far, or whether in earlier times the space between the two walls continued all along, we were unable to ascertain, as it was not dug out except at the south end, where we made a special excavation for the purpose of examining the Roman wall. There is reason to think, however, that the boundary wall did not extend farther than the south side of Warwick Square, as excavations in the new Sessions House yard were carried eastward through the line of the two walls as far as the square, and here different conditions were revealed.

[1] *Archaeologia*, lx. 189.

[2] *Stow's Survey*, C. L. Kingsford's ed., i. 325.

TWO VIEWS OF ROMAN CITY WALL, SITE OF CENTRAL CRIMINAL COURT, OLD BAILEY

Published by the Society of Antiquaries of London, 1912

The base of the Roman wall was first encountered, and on being cut through showed a good section, the first bonding course consisting of two rows of tiles. Beyond this on the city side, instead of a vacant space of 7 ft., such as we found to the south of the site, there was another wall, 8 ft. thick, standing against the city wall. It was compactly built, principally of chalk, but contained also Kentish rag, flints, and pieces of medieval tile, the whole being well grouted with hard white mortar and forming a mass of considerable strength. This inner wall had not suffered so much destruction as the city wall, and about 2 ft. more of its height remained. It was clear, however, that the city wall still existed when the inner wall was built, as on this side the rubble had simply rested against it without any facing. On the Warwick Square side it had been faced with squared ragstone, and this had been coated with stucco, painted red, having evidently formed the internal wall of an apartment of a building extending eastwards. A brick sewer was found at the base, which at some later time appeared to have been tunnelled through the masonry. It was 3 ft. 6 in. wide, with an opening of 18 in., the channel running north and south.

In digging to the east of this point, the ballast was reached at a depth of 17 ft. or 18 ft. below the level of the present surface of Warwick Square, but it was noticed to be falling towards the east. The general conditions here are shown by the photograph of the site taken during the operations, looking towards the backs of the houses in Warwick Square (pl. LVIII). On the right is the end of the Amen Court wall (1), and below this is the exposed face of the Roman wall (2). At the termination of these are the remains of a projecting structure beneath which was the Roman wall, having the wall 8 ft. thick built against it. The white cross indicates the present level at Warwick Square, while the Old Bailey level at this point is shown by a black cross.

At the south of the site a further length of the Roman wall was found, more or less cut into, though portions of it were in good condition. The soil on the site generally was not excavated to any great depth, but trenches were dug for wall-footings, and several pier-holes were sunk. All these showed that overlying the gravel was a deposit of black mud, like the filling of the city ditch, but they showed also that no regular ditch had been cut here, and that the surface of the gravel lay unevenly all over the site at depths varying from 17 ft. to 23 ft. That something in the nature of the ditch existed there is no reason to doubt, but it was probably formed by raising a bank on the shelving ground which here formed the side of the Fleet valley. There were many relics in the black mud, some of them rather earlier than those generally associated with the medieval city ditch. Among the objects were examples of well-preserved leather, several of which are figured on pl. LXVIII. Pin polishers occurred in such quantities as to be quite disregarded. They were mostly thrown into the

rubbish carts, but some dozens came into our hands, all of which were of the ordinary type.

A trench for footings was carried along the outer face of the Roman wall and about 3 ft. below its base. This showed that the original soil overlying the gravel was brick-earth, in which, at some earlier period, several small streams had made their way. At the extreme south end the base of the Roman wall had been cut through for the adjoining warehouse, but beyond this, for 20 ft. to the north, it remained intact. Under this were indications of a small stream about 3 ft. wide and 18 in. deep.

To the north the Roman masonry had been destroyed and replaced by the footings of the buildings lately standing there, but these had been carried no deeper than the original wall, and the soil on which it had rested was undisturbed. In this was disclosed the section of a stream no less than 17 ft. wide and 2 ft. deep. The trench in which these discoveries were made was dug a little in advance of the wall, so that the original wall foundations were not disclosed. In order to ascertain how the Romans had carried the wall across the stream we had the filling dug away on the face of the section, when it was found that piles had been driven into the black mud. Although the original masonry had been removed in this part there is little doubt that the piles were placed there to carry the original structure, and were again utilized by the later builders after they had, perhaps unnecessarily, removed the Roman masonry. Although no flint and clay puddling appeared to have been used in the larger stream-bed, it was found on each side in the brick-earth, and it would appear that the streams had become choked up before the building of the wall. There was, however, no opportunity of examining them except during the short time that they were exposed in section.

To return to the south-east corner of the ground cleared after the destruction of the Old Bailey Sessions House. It was here that Mr. J. Terry had made an excavation in 1901 and disclosed the base of the Roman Wall.[1] In his account he describes the Roman masonry as 'resting on the ballast', and does not mention the substratum of clay and flints. In order, therefore, to ascertain if this had been omitted in this part we re-opened the ground, and found that, although it was there, it did not project beyond the face of the wall as in most places, and would therefore have been easily overlooked. It was only when we dug under the wall that the flint and clay appeared. The original surface was gravel with a thin covering of brick-earth. In places these were so mixed that it was difficult to determine which was predominant, but at this particular point the term ballast is perhaps quite correct.

There was an unusual depth of ragstone beneath the first three tiles on the

[1] *London and Middlesex Arch. Soc. Trans.*, n. s., vol. i, p. 351.

1. REMAINS OF TOWER, OLD BAILEY, AS FOUND 1907

2. ARCH LEFT AFTER REMOVAL OF REMAINS OF TOWER, OLD BAILEY, 1907

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inner side of the wall, which marks the level of the red sandstone plinth on the external face. This extra depth is probably accounted for by the slope of the ground from Newgate towards the south. As the substructure projected on each side of the wall, making its thickness about 10 ft., it extends beyond the trench filled with puddled clay and flint, which seems to have been here no wider than in other parts where the wall is of normal thickness. The plinth stones were missing on the outer face, and on this side the wall had evidently suffered much decay and had been repaired in later times, so that its thickness at the first bond was only about 7 ft. It should be mentioned, perhaps, that at the usual distance from the line of the city wall at the Old Bailey the seventeenth-century sewer could be traced (pl. LVII, fig. 1).

Tower against inside of City Wall.

At this south-east corner, where Mr. Terry's excavation had taken place, a remarkable object attracted our attention on first visiting the cleared site. This was a fragment of old masonry (pl. LIX), which rested on the city wall (where it adjoined the linoleum warehouse, no. 6 Old Bailey) and on the north side ran back to the boundary wall of Amen Court; against it an engine-house had been erected. The south side of the structure had been destroyed, and modern brickwork obscured much of the front. From what remained, however, it had clearly formed a rectangular building about 12 ft. square, and 18 ft. in height from the ground level of the Old Bailey—the material being partly brick and partly stone rubble. It had an arched roof of brick, part of which, on the north side only, remained, but the entire arch was incorporated in the Amen Court wall. The north side of the building was intact, while in what was left of the front were the remains of a window. On the under side of the brick roof were the ends of four ribs of plaster or stucco. In fact, we had found part of the Old Bailey tower, which J. W. Archer described and illustrated[1] (pl. LX, fig. 1). His original water-colour, painted in 1845, is now in the British Museum.

The circumstances of the discovery of this tower some time earlier serve to show how the space between the city wall and the Amen Court wall had been forgotten. A dog having squeezed itself into a crevice of what was thought to be a solid wall at the back of premises in the Old Bailey, the builder who occupied them removed some of the stones and discovered the interior of a tower, which he appropriated and converted into a two-stall stable, while the height of the building enabled him to floor it midway, and to convert the upper part into a hay-loft. Happening to come upon it when in this condition, Archer

[1] *Vestiges of Old London*, by J. W. Archer, 1851.

at first took it to be Roman work,[1] but on closer examination concluded that it was medieval, and 'that it may have appertained to a sally-port in connection with Newgate'. His description of the structure agrees accurately with the remains we found, except that he speaks of 'stone-ribs of late medieval

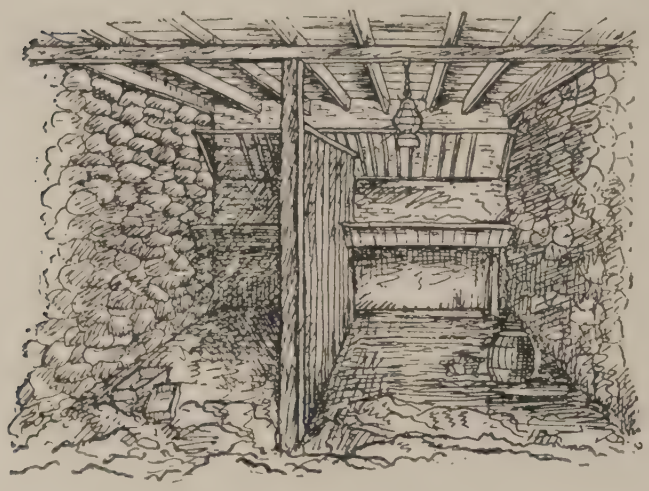


Fig. 17. Old Bailey Tower stable.

Fig. 18. Old Bailey Tower entrance.

Fig. 19. Old Bailey Tower upper chamber.

character', and his drawing of these suggests Gothic vaulting ribs. Archer calls it 'the only vestige of a tower belonging to the wall in its entire height, and with its original roof existing', and adds that in his opinion the city wall from Newgate to Ludgate was not earlier than the beginning of the twelfth century. He thought it was the same as the wall of St. Paul's Cathedral precinct, built

[1] *Illustrated Family Journal*, 1845.

1. ARCHER'S ILLUSTRATION OF TOWER, OLD BAILEY

2. TOWER, OLD BAILEY, AS FOUND 1895

Published by the Society of Antiquaries of London, 1912

by Richard Beamor. He mentions, however, that adjoining the tower a portion of the city wall was visible, and 'near the base some appearance of a double row of Roman tiles may be traced, but not with such precision that it can be determined whether they are not merely an incidental insertion of Roman materials'.

For more than forty years after Archer's drawing the premises connected with the tower in the Old Bailey were used for business purposes of varied character, and changed hands several times, until at last, in 1886, they were closed and became vacant. The tower was then rediscovered, and attention was drawn to it by a London newspaper.[1] The writer of the article mentions the Roman wall as running along the 'side' of the stable, and speaks of a double course of red tiles some 4 ft. 6 in. from the ground. 'The arch of the roof', he says, 'is built of narrow Roman bricks set on end, of similar type to those seen in the abbey of St. Albans.' Several sketches and diagrams accompany the article, three of which we reproduce (figs. 17, 18, 19). These are enough to show that the structure was the same as that described by Archer, and was in almost the same condition. The lower part had apparently been shut in by recent buildings, and the upper chamber could only be reached by ladders from the outside. The ground level must have been raised some feet after Archer's time.

The writer expresses his opinion that the tower was a relic of one of the seven gates of the Roman city, and pleads for its preservation. He suggests a scheme for this which involved the formation of a tunnel from the Old Bailey, giving access to the tower and running through to Amen Court, the much higher surface of which was to be reached by a flight of steps. Success did not attend his efforts, but the accounts of the tower to which we have referred gave rise to much misunderstanding, both as regards its age and object. In any case there were good grounds for believing that it was not an ordinary bastion, as the plan of the city wall which appears in Archer's *Vestiges of Old London* shows it on the *inside* of the wall only. This is a point that has been rather overlooked, or ignored as an inaccuracy on the part of Archer. According to the maps of Morden and Lea (1690), of John Leake and others in their 'Exact Surveigh' of the city immediately after the Great Fire, and of Thomas Bowles (1725), there were two of the usual external bastions between Newgate and Ludgate. It should, however, be noted that neither Braun and Hogenberg (1572) nor Ogilby and Morgan (1677) have marked any bastions in this part. If the former series of maps is correct in this particular, the positions of these bastions would be respectively, one on the site of Newgate Prison, and the other adjoining Stationers' Hall, close to the point where the tower occurs, but on the opposite side of the wall. Both these positions are

[1] *Pall Mall Gazette*, Feb. 3, 1886.

marked on Ogilby and Morgan's plan by small buildings, which may very possibly have been constructed on the buried foundations of bastions, but there seems to be no record of the latter having been brought to light.

After 1886 the house in front of Archer's tower, which was just south of the then Central Criminal Court, remained unoccupied for years. The linoleum warehouse immediately to the south of it was erected in 1895, and slightly encroached on the tower, the south wall of which was then destroyed, but no further notice was taken of the old building, which had been again forgotten. It was therefore a pleasant surprise to find that so much of it had survived to our time. We are now able to say with confidence that this tower, whatever may have been its purpose, was not erected till after the old mural fortifications enclosing the city had ceased to be effective for purposes of defence.

The upper part of the city wall (here obviously rebuilt) served to form the front of the tower on the west. It had been cut into, and thus reduced in thickness to the extent of no less than 5 ft. on the east or inside, and as the tower was 12 ft. square, this left 7 ft. as the original distance between the city wall and the Amen Court wall, which, as we have remarked on a previous page, was in all likelihood built as the boundary of the Cathedral precinct. In the west front, or what was left of the city wall, the door and windows of the tower had been cut, and internally it was cased with brickwork. Its north side, connecting it with the Amen Court wall, was partly of brick, but parts of it were ragstone, probably material obtained from the city wall. The arch had originally been carried through the Amen Court wall, but the opening had been bricked up afterwards, and in this filling, near the top, was a small window fitted with an iron bar, which was not visible from Amen Court. A flat top rested on the crown of the vaulting, the spaces between the two, from the centre to the sides, being filled up with thin tiles and bricks (plates LXII, LXIII). No Roman material was observable, the bricks being of the character common to the Tudor period or later. They measured $8\frac{1}{2}$ in. by 4 in. by 2 in., and were without the hollow usually found in modern bricks. Those of the arch were slightly splayed, measuring $1\frac{3}{4}$ in. at the thinner end. On the vault were remains of the ribs of plaster which Archer mistook for stone. Owing to the roof being broken through we could see at once that these were not constructional, but merely applied to the surface of the brick, and their appearance suggests that this building would not be earlier than the seventeenth century.

During the examination of the remains of this tower we made the acquaintance of Mr. Snow, who had been connected with the building of the adjoining linoleum warehouse, and he was good enough to lend us a series of photographs showing the appearance of the tower after the ground had been cleared for the building operations in 1895, and during its partial destruction

1. TOWER, OLD BAILEY, AS FOUND 1898

2. THREE ARCHES SOUTH OF TOWER, OLD BAILEY FOUND 1895

at that time. These photographs were taken by Dr. Crace Calvert, and we have the kind permission of the architects, Messrs. Searle & Son, to reproduce them. On pl. LX is a general view of what was then disclosed, A marking the window, which partly remained when found by us. Between this and the doorway (B) a cross-wall had been built against the front. To the right of the door the masonry had been broken away, but there may have been another window here. Archer expressly says there was a small circular-headed window entire, with the remains of another; his drawing, however, does not extend beyond the doorway (pl. LX). The sketch of the interior in the *Pall Mall Gazette* shows only one. This sketch, however, is certainly at fault in the position of the window, which is placed too near the centre, as we were able to see by the fragment which remained. Later building against the interior and repairs since Archer's time may have done much to obscure these details. The *Pall Mall Gazette* draughtsman also shows the door and window with elliptical heads, which, if accurate, is more in character with the arch of the roof than the circular heads represented by Archer.

Tylor, in his account of the discoveries at Warwick Square,[1] says that the Warwick family 'had on the west or south-west of the wall, a turret or tower by which they had access from Warwick lane to the street outside, now called the Old Bailey, without going through the new gate'. He gives as his authority for this a 'MS. in Record Office, 15', but his reference is not sufficiently detailed to enable us to trace it. The structure with which we have been dealing was too recent to have been originally connected with the Earls of Warwick, but if Tylor's authority be accepted as accurate, it is not unreasonable to suppose that the passage-way referred to was maintained, and that at a later time rebuilding took place on the site of a tower that belonged to the king-maker when he came 'with six hundred men all in red jackets imbrodered with ragged staues before and behind and was lodged in Warwicke Lane'.[2]

The great rise of the soil within the city would perhaps have made it necessary to reconstruct the older postern, which in all probability had an external stair-way leading from the door of the original upper floor to a bridge across the city ditch. The last fragments of Archer's tower were eventually pulled down, the ground being cleared back to the boundary wall, when its appearance was as shown in plate LIX, and all that now remains of it is the brick arch, the east face of which can yet be seen built into the wall of Amen Court, a short distance above the ground level. On the Old Bailey side of the wall there is now a yard whence it is also dimly visible.

A little to the south of the tower, about the position marked x (pl. LX, fig. 2), was another curious structure, of which the only record we have is one of the

[1] *Archæologia*, vol. xlviii, p. 222. [2] *Stow's Survey*, C. L. Kingsford's ed., vol. i, pp. 87, 88.

photographs given us by Mr. Snow (pl. LXI, fig. 2). It will be seen that it consisted of three arches superposed, and built into Amen Court wall. The lower two are pointed arches, but the upper one is elliptical like the vault of the tower, and apparently formed a chamber projecting on the Old Bailey side. The central arch does not extend beyond the face of the wall, and merely gives additional strength to support the upper chamber. The lowest seems to pass through the wall, and has the appearance of a sewer, which would have drained into the city ditch. The whole structure is probably of the Tudor period, being perhaps somewhat earlier than the tower.

Medieval City Wall from Ludgate to the Thames.

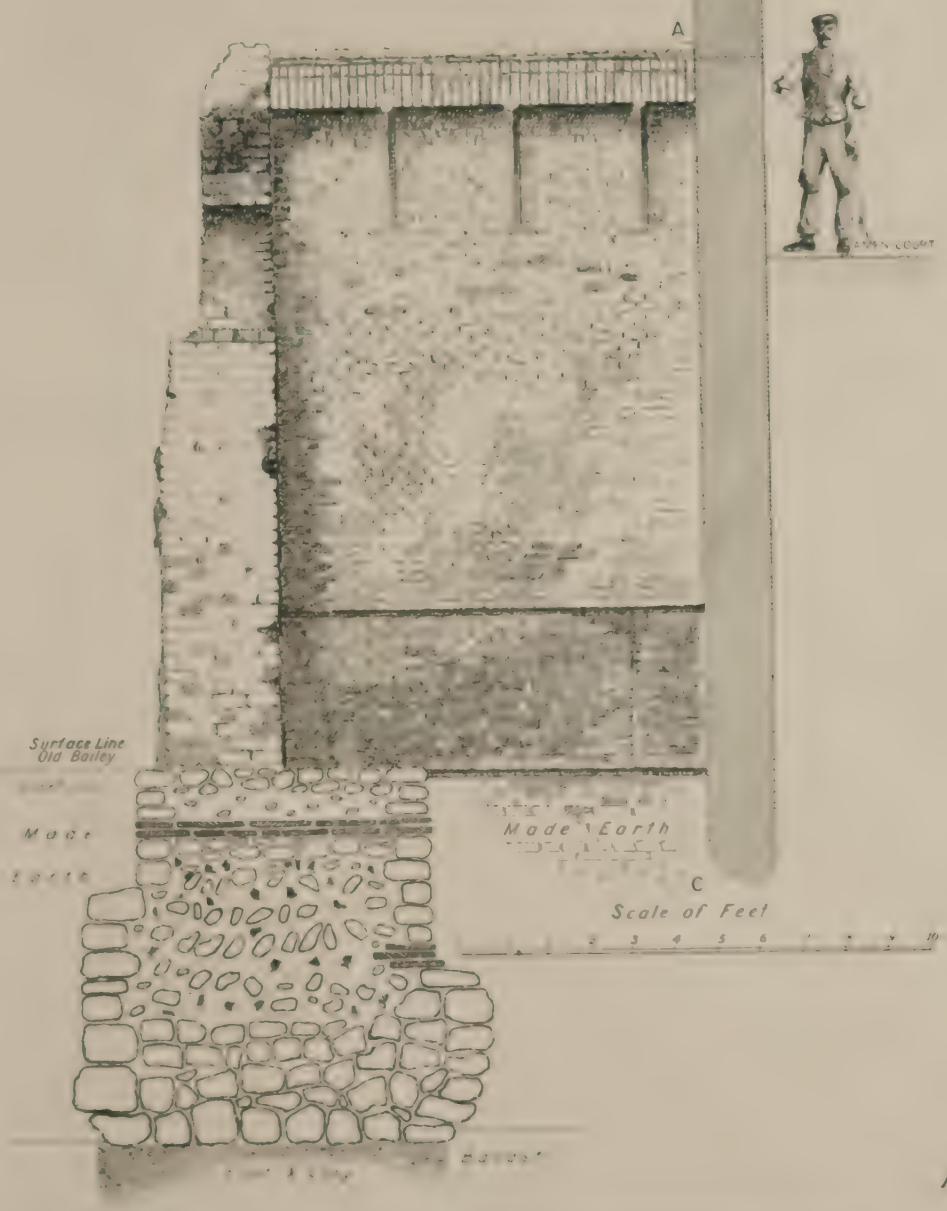
The line of the Roman wall has now been definitely traced from the Tower of London to Ludgate, and, throughout the whole of the course we have followed, this wall is practically of the same character. Its original course from Ludgate to the river-side is a matter concerning which we have no satisfactory evidence.

Reference has already been made to the later addition, which included the Blackfriars precinct. Much of this wall was standing until recent times, and portions of its base still exist underground, built into the backs of the warehouses on the south-west side of Ludgate Hill, its line forming the north side of Pilgrim Street. It was carried in this direction until reaching the river Fleet, when it was turned sharply along its east bank to the Thames.

The nature of this wall at one particular spot was disclosed in 1909, when it was cut into by a trench for telephone wires laid along the more westerly part of Pilgrim Street, the difference in its structure from that of Roman masonry being very apparent. It was solid and compact, built of irregular pieces of stone pronounced by Mr. J. Allen Howe, curator of the Jermyn Street Geological Museum, to be from Gatton or Reigate. These were set in hard mortar. Chalk and flint were also among the material. Only a small piece of the wall could here be examined.

In forming the subway across Queen Victoria Street at its junction with the approach to Blackfriars Bridge in 1910, a considerable portion of this wall was found crossing the street in the direction of St. Paul's railway station. It was 10 ft. in thickness, faced with stones some 12 in. square, the core being largely of chalk, but it contained also flint, medieval tile, etc., the whole being grouted with good strong mortar.

Among existing photographs are two of the same wall laid bare in 1882 at the junction of Broadway, Pilgrim Street, and Little Bridge Street, which has since been widened and rebuilt, and now forms the western part of Pilgrim Street.



SECTIONAL ELEVATION OF TOWER, OLD BAILEY, 1907.

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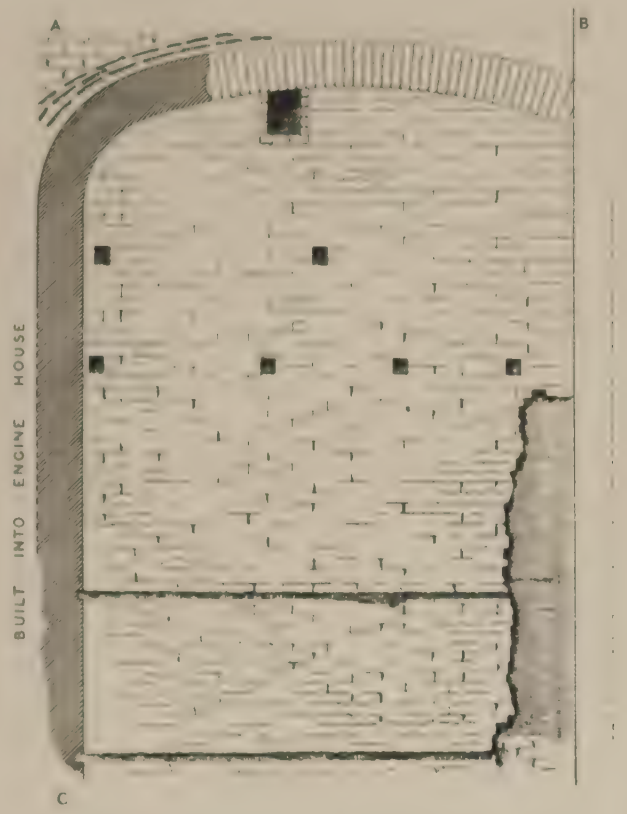
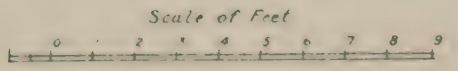


Fig. 1



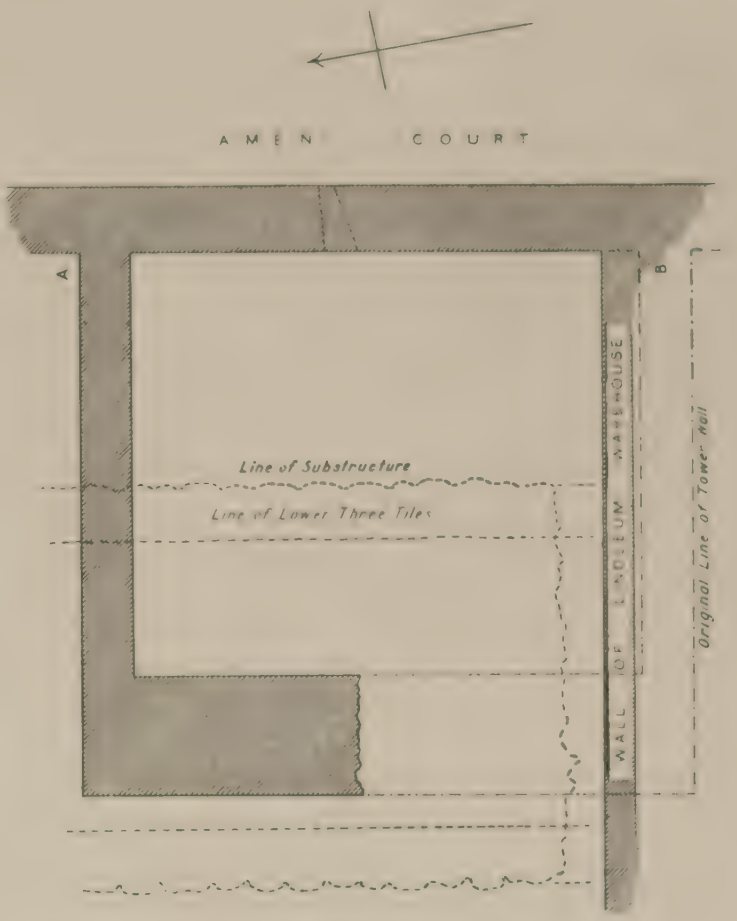


Fig. 2.

F.W.R.

Fig. 1. SECTIONAL ELEVATION OF EAST END OF TOWER, OLD BAILEY, 1907.

Fig. 2. PLAN OF TOWER, OLD BAILEY, 1907.

Published by the Society of Antiquaries of London, 1912.

The construction of this, as far as can be judged from the photographs, which it has not been thought necessary to reproduce, would fit in with the descriptions given above. It was in this medieval wall, a short distance north-west of Ludgate, that a square tower was exposed to view by a fire in 1702, and was three times drawn by J. T. Smith.[1]

There is perhaps little reason for mentioning this later subsidiary wall, except our desire to emphasize the fact that it was in no way connected with the Roman wall, but represents an extension of the city in the latter part of the thirteenth and beginning of the fourteenth century. Previous to this extension the city wall ran from Ludgate southwards through the ground acquired by the Black Friars. We have record of the precise date of the change, for Stow tells us that in 1282 King Edward I granted a licence to Robert Kilwarby, the archbishop, 'to breake and take down a part of the wall of the citie from Ludgate to the riuer of Thames,' and in 1310 Edward II 'commaunded the Citizens to make up the wall alreadie begunne, and the tower at the end of the same wall'.[2]

Roman City Wall from Ludgate to the Thames.

A line drawn nearly due south from Ludgate Hill to the river would pass through the east end of Playhouse Yard and Printing House Square. In 1843 W. Chaffers, jun., recorded on the former site a wall 10 ft. thick, of large unhewn stones embedded in red mortar, and an inscribed monument. But E. B. P. in the *Gentleman's Magazine* for the same year places it at the west end of the yard. Again, under *The Times* office in Printing House Square,[3] Roman masonry came to light in 1849, which was thought by Roach Smith to be part of the city wall. If the description by Chaffers of the Playhouse Yard wall is accurate it could not have formed part of the original wall on the land side, its masonry resembling that of the south wall, which we hold to be later. The fragment in Printing House Square may have been a continuation of it.

There is, perhaps, more reason for thinking that the original wall on the land side may at first have been continued to the river in a south-easterly direction from Ludgate. A few years ago, in digging foundations at no. 56 Carter Lane, a wall was discovered which, according to the builder, was 8 ft. thick, and constructed of ragstone and bonding courses of tile in the way that we are familiar with. It ran diagonally across the site towards the south-west. Perhaps we should add that a parish boundary here for a short distance agrees

[1] *Antiquities of London*, 1792, two views and plan; *Ancient Topography of London*, 1815.

[2] *Stow's Survey*, C. L. Kingsford's ed., vol. i, p. 9.

[3] *Journ. Brit. Arch. Assoc.*, v. 155; *Collect. Antiq.*, i. 125; *Antiquary*, xxv. 51.

[4] Roach Smith records his opinion (*Ill. Rom. Lond.*, 18) that a then diverged towards St. Andrew's Hill, passing to the south of St Andrew's Church, but of this the abrupt descent was his only evidence.

with the position of this wall in Carter Lane. Further, this line marks the limitations in a south-western direction of Roman building remains that have been found in the city, while there is satisfactory evidence that at an early period important and large structures had been erected just within the area of this boundary. For some reason the ground on the river-side at this south-west corner may have been unfit for building. The low-lying part of it on each side at the mouth of the Fleet was in all likelihood largely mud. Later in Roman times there would have been embankment. To some slight extent also the volume of water forming the Fleet stream would probably have diminished. There is evidence of climatic change during the Roman occupation, to some extent brought about by clearance of forest land, which diminished the rainfall.[1]

The South or Riverside Wall.

We now come to the wall which enclosed Londinium on the river-side. Our knowledge of it is somewhat restricted, while it possesses certain characteristics the significance of which has been generally overlooked. Unlike the rest of the city wall, that part skirting the river disappeared from view at an early period, so that nothing but a tradition of it remained in the twelfth century, for Fitz Stephen, the friend and biographer of Becket, after mentioning that the wall of the city is high and thick, having on the north side towers placed at proper intervals, continues thus: 'London formerly had walls and towers in like manner on the south, but that most excellent river, the Thames, which abounds with fish, and in which the tide ebbs and flows, runs on that side, and has in a long space of time washed down, undermined, and subverted the wall in that part.'[2] That Fitz Stephen's statement of the former existence of a south wall contained some truth has been proved by discoveries in modern times, but these have also made it tolerably certain that the old chronicler was incorrect in attributing its overthrow to the action of the tides.

Considerable stretches of the base of this wall have been found, and its line can now be traced fairly well from the foot of Lambeth Hill, along Thames Street, to the Tower of London. At the western end no sign of it has yet been recognized, but Roach Smith, to whom we owe most of our knowledge of this south wall, says that it 'formed an angle at Lambeth Hill and Thames Street'. This description is unfortunately rather vague; it will, however, be seen by the general map (pl. LXIV) that if the line of the wall at Carter Lane is prolonged it meets the south wall at this point. It may have been the junction of the original wall with the original wall that Roach Smith describes as forming an

[1] *Excavations in Cranborne Chase by General Pitt-Rivers*, vol. i, p. 27, ii, p. 56, iii, p. 3.

[2] Translation of Fitz Stephen's account, *Stow's Survey*, Thom's edition.

angle.[1] It is, however, not unlikely that when the later south wall was formed it was carried to the west, to meet the later wall running south from Ludgate, the course of which we have indicated as having perhaps gone south through the sites of Playhouse Yard and Printing House Square.

A sharp look-out has been kept for any discovery that might throw light on this obscure west corner, and during the summer of this year we received information from our friend Mr. C. S. Willis that a wall had been discovered under the roadway of no. 9 Upper Thames Street. On visiting the site we found that this wall was 10 ft. 6 in. below the present surface, and rested on the ballast at a depth of 19 ft. It was about 5 ft. in thickness, was built of large stones, some of which were 6 ft. long and evidently formed no part of the city wall, for it ran in a north and south direction, crossing the roadway and following the passage of no. 9 towards Anchor Wharf. In all probability it was connected with Baynard's Castle, the building of which may have been the cause of the disappearance of the south wall at this point.

In construction this south wall, as we have already pointed out, has such distinctly different characteristics from the wall enclosing London on other sides that there are good reasons for the belief that it belonged to a later period of the Roman occupation. As it has been rather generally supposed that the Romans would never at any period have built a wall round the land side and left the river side open, and that the south wall, therefore, must have been part of the same scheme of defence, it is important that its nature should be fully understood. On this account we give Roach Smith's detailed description of the stretch that he saw in 1840[2]:

> The upper part was generally met with at the depth of about nine feet from the level of the present street, and six from that which marks the period of the great fire of London; and as the sewer was constructed to the depth of twenty feet, eight feet of the wall in height had to be removed. In thickness it measured from eight to ten feet. It was built upon oaken piles, over which was laid a stratum of chalk and stones; and upon this a course of hewn sand-stones, each measuring from three to four feet, by two, and two and a half feet, cemented with the well-known compound of quick lime, sand and pounded tile. Upon this solid substructure was laid the body of the wall, formed of rag-stone, flint and lime, bonded at intervals with courses of plain and curved-edged tiles. This wall continued, with occasional breaks where at some remote time it had been broken down, from Lambeth Hill as far as Queenhithe. . . . One of the most remarkable features of this southern wall remains to be described. Many of the large stones which formed the lower part were sculptured and ornamented with moulding, denoting their use in the friezes or entablatures of edifices, at some period antecedent to the construction of the wall.

[1] *Archaeologia*, vol. xxix, p. 150.

[2] *Illustrations of Roman London*, 18. This description appears with unimportant variations in *Archaeologia*, vol. xxix, pp. 150-1.

Fragments of sculptured marble, which had also decorated buildings, and part of the foliage and trellis work of an altar or tomb, of good workmanship, had also been used as building materials. In this respect the wall resembles those of many of the ancient towns on the continent, which were partly built out of the ruins of public edifices, of broken altars, sepulchral monuments, and such materials, proving their comparatively late origin, and showing that even the ancients did not at all times respect the memorials of their ancestors and predecessors, and that our modern vandalism sprang from an old stock.

It is extremely improbable that a wall of this description could have been built at the same time and formed part of the same scheme as that which we have noticed on other sides of the city. When the wall on the land side was built it is evident that neither ruined buildings nor forgotten monuments were quarried. The city may then have been in vigorous youth, for nothing but specially prepared material was used in the structure of its defences, not even so much as a roofing-tile. The south wall, on the contrary, points to a declining city, the defences of which were formed from the ruins of its former prosperity and greatness. In this respect the bastions, the doubtful structures south of Ludgate, and the river-side wall agree, and they are all certainly later than the original wall on the land side. It may be argued that this south wall perhaps replaced an earlier one, but no evidence of this is forthcoming. It is also improbable that any such earlier wall would have been 'undermined and subverted' by the ebbing and flowing of the Thames, because we know that the Romans embanked it again and again, and an earlier wall would therefore have become, with time, less likely to have been affected by the river. There are reasons for believing that there were changes of tidal condition during the Roman period,[1] but the more likely explanation, in our view, is that in earlier times the city needed the protection of a wall only on the land side, and that the southern wall was built afterwards, when it became more liable to attack by water as the Roman authority lost its grip.

There would doubtless have been some reluctance to erect such an obstruction as the wall across the quays and wharves of the earlier Londinium, already a great resort of merchants A. D. 61,[2] a commercial city which had attained its full extent and greatest importance during the first half of the Roman occupation, when a few war-vessels would have sufficed to defend the river and the shipping. In later times, with trade diminished, its power failing, harassed by enemies on all sides, London had to rely for security on closing in and strengthening the fortifications.

There has been little opportunity of observing the south wall of London

[1] *Essex Naturalist*, xvi. 258-62.

[2] Tacitus, *Annals*, Book xiv, sect. 33 'Londinium—cognomento quidem coloniae non insigne sed copia negotiatorum et commeatuum maxime celebre'.

in recent times, but in October, 1911, a portion of it was met with on the north side of Lower Thames Street, a little east of Fish Street Hill, in sinking a pier hole for a new building at no. 125 Lower Thames Street (fig. 20). It lay directly under the present building line and the pavement, and although the hole was only 5 ft. square it was sufficient to disclose the character of the wall, which agreed generally with what has been found before. The base

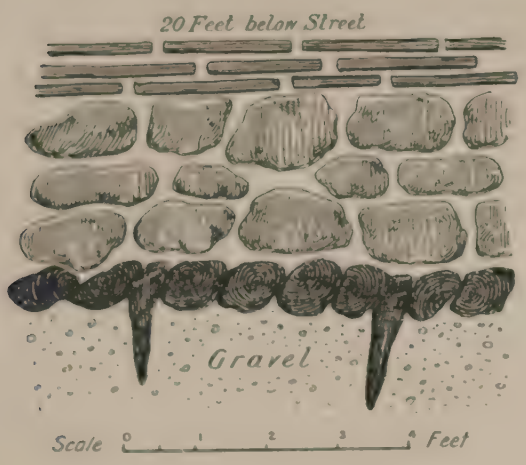


Fig. 20. Wall, Lower Thames Street.

Fig. 21. Pile under wall, Lower Thames Street.

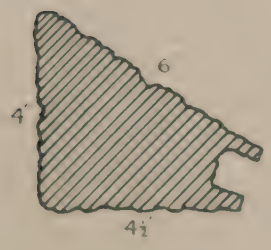


Fig. 22. Section of pile.

rested on the ballast at a depth of 24 ft. below the present surface. Large, roughly squared timbers, 12 ft. long and about 8 in. square, were first laid on the top of the ballast across the thickness of the wall, these being held in position by pointed piles driven in at intervals. One of them was preserved and is now in the Guildhall Museum (fig. 21). This is 30 in. long and in the upper part is triangular in section (fig. 22), measuring 5 in. by 4 in. by 4½ in. On one of the

angles a channel has been cut as if to secure a plank. On these timbers were laid large irregular sandstones and ragstones bedded in clay and flints. Three layers of these stones showed on the face, above which was a bond of two rows of yellow tiles. Some chalk, together with other stone, formed the core, the whole being cemented with red mortar. The total height of the masonry remaining was 3 ft., and its width was 10 ft. Some of the stones were apparently re-used, though no moulded stone appeared in the small piece uncovered.

The great importance of this discovery is that it enables us to fix the line of the wall in this part with greater accuracy. On visiting the site it was clear that this piece of wall was the continuation of that opened up on the adjoining premises in 1880 and described as occurring at Monument Yard.[1] This building extended from Monument Yard to Thames Street, and when the site was excavated for the re-building, the writer who noted the find probably entered from Monument Yard and considered this designation sufficient. Without any further details as to its position, this locality had to be accepted as the line of the wall. As now ascertained, the line of the south wall can be made out in a more satisfactory manner, following, as it does, through the recorded pieces at the Coal Exchange[2] and the Custom House.[3] It also forms a natural connexion with the line which Mr. A. W. Clapham has recently suggested for it within the Tower precinct, viz. that marked by the Bell, Wakefield, and Lanthorn towers, which from their forms and the distance between them might well suggest the sites of bastions. The last-named, the most eastern of the three, is about in a line with the existing fragment of the eastern wall, by the remains of the Wardrobe tower whence we started. This, on Loftus Brock's evidence,[4] we can affirm with some confidence to have occupied the site of a Roman bastion.

As only a memory of the south wall survived to the time when Fitz Stephen wrote, and as it would have interfered with free access to the river, perhaps much of it had disappeared by the time of the Norman invasion. It is, however, most likely that there were remains of it at the south-east angle, both east and south. In the light of recent discoveries the idea must be given up that William the Conqueror encroached on and destroyed part of the Roman wall where the tower precinct now is. Modern evidence suggests that the Normans began by camping in the angle indicated above when they first dominated London, having the wall on two sides as a defence. It was some years before they built on the site a permanent fortification. It must be borne in mind that the original Norman buildings occupied a comparatively small part of the space now covered by what we call the Tower of London. Among the most ancient of them, besides the keep, were the Wakefield tower and the old Lanthorn tower, both

[1] *Antiquary*, ii. 220.
[2] *V. C. H. London*, p. 71.
[3] *Cat. Antiq. Roy. Exch.*, xxiii.
[4] *Journ. Brit. Arch. Assoc.*, xxxviii. 130.

in the line suggested, and the former almost certainly on the site of a flanking tower.

Fitz Stephen expressly tells us that the south wall had towers, as did the wall on the north. The interesting drawing which we here reproduce from a MS. in the British Museum,[1] shows the Canterbury Pilgrims starting on their journey from Southwark, with a view of London in the background (fig. 23). Although the Thames is not well made out, here is quite distinctly the south front of the city, along which is a wall with towers. St. Paul's Cathedral is there, also what must be meant for the church of St. Mary Overy, and perhaps part of the Tower of London. The view, which occurs in the prologue of a poem by John Lydgate, is not strictly topographical, but it is an epitome of what, according to the limner's ideas, London should be like, or what it had been. It represents, in short, the appearance of what was described by Fitz Stephen.

Fig. 23. Canterbury Pilgrims. From a MS. in the British Museum.

The Walbrook and Tributaries.

Having completed the circuit of the walls, we will now deal with discoveries relating to some of the streams which flowed through the city in Roman times. We naturally turn first to the Walbrook, on both sides of which buildings had early sprung up, so that, when the wall was erected, it flowed with a useful supply of fresh water through the centre of the enclosed Londinium, its capacious mouth at Dowgate forming a quayed harbour which, before the building of the bridge, must have been connected by a ferry with the Roman settlement of Southwark.

Recent discoveries relating to the Walbrook are not very important, but they serve to supplement the account we gave in our last paper. Although of considerable dimensions near its outfall, it was a short river, with small watershed, and derived its supply in the first place from the numerous springs issuing out of the gravels in the neighbourhood of Hoxton and Shoreditch. These were supplemented by several tributaries, which joined it as it flowed through Finsbury and the city.

A portion of the bed of the stream not far from its source was uncovered

[1] *Royal MS.* 18 D II, f. 148.

in 1907 at 11 Blossom Street, in part of Messrs. Nicholls & Clarke's premises in that street and High Street, Shoreditch, a large space being then cleared and excavated for rebuilding, and through the kindness of Mr. Gilbert Lovegrove we were enabled to examine the nature of the earlier conditions. A deposit of marsh mud was found covering the gravel, in patches of irregular thickness, over the whole site. Cut into the gravel were many small channels filled mostly with washed sand. These appeared to have been formed by streamlets constantly shifting their bed in time of flood. Later the water had spread more sluggishly over the ground, filling in the hollow surfaces in which the peaty mud was formed.

Some of the mud deposit was submitted to Mr. E. T. Newton, F.R.S., who found in it the following remains:

Sheep	Horn core.
Small mammal (?)	Patella and toe-bone.
Mouse	Femur and tibia.
Eel	Vertebrae.
Fish (?)	Vertebrae and bones.
Beetle (?)	Large cephalothorax.

Moorgate Street.—A western arm of the Walbrook was revealed in 1907, when an excavation took place for the present Northern Assurance Offices, which are at the extreme south-west corner of Moorgate Street, where it joins Lothbury, and next to Basildon House (fig. 24). Over most of this site the top of the original surface was reached at a depth of 13 ft. It was formed of gravel and sand resting on the clay, which here occurred generally at a depth of about 25 ft., but at the south-east corner the level of the clay dipped to 30 ft. below the present ground level, and was covered with fine washed sand in this lower part. Cut in the gravel was the bed of a stream about 20 ft. wide crossing the site from under Basildon House, no. 7 Moorgate Street, which runs back to Coleman Street. Mr. Williams, who was in charge of the work, informed us that when the soil was being excavated some years ago for Basildon House, similar conditions were found there, and a structure of piles and planks was uncovered, which appeared to have been a small dock. From the direction of this stream at the site of the Northern Assurance Offices, it would have crossed Lothbury, and would probably have joined the Walbrook at Princes Street. At the south end, close to Lothbury, a chalk wall ran on each side of it, and these walls were traced for a considerable distance through the excavated site. Between them the filling consisted of black mud with remains of rushes. In this were some fragments of Roman pottery, including a piece of Samian with the mark PRITMA.

On the bottom of the stream, under the frontage in Lothbury, was what at first appeared to be a box or chest, 3 ft. square and formed of oak boards 2 in. thick, but it was uncovered at the top. This was examined very carefully, as it

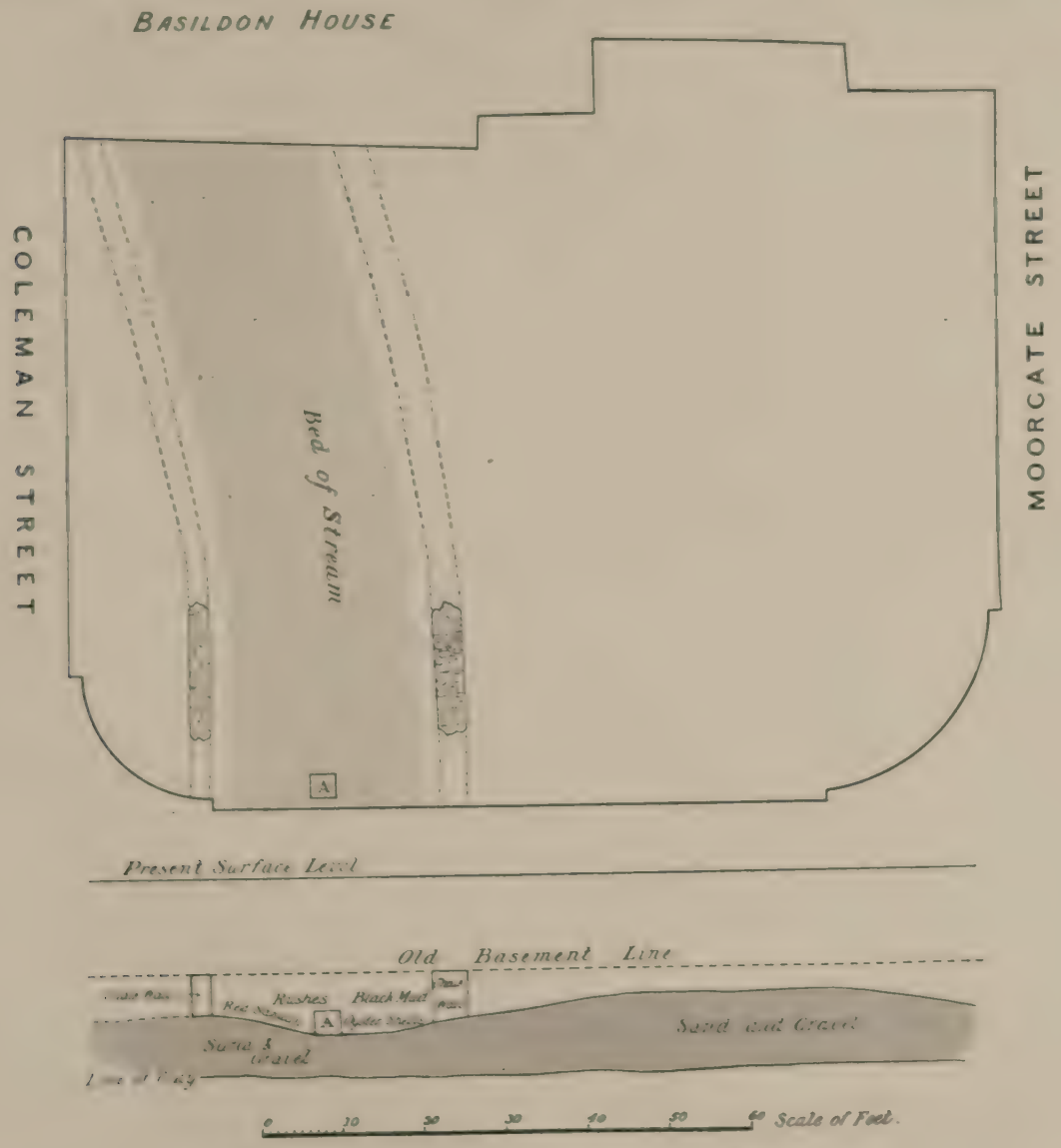


Fig. 24. Plan and section of the site of the Northern Assurance Offices.

seemed probable that it might contain something of interest. It proved, however, to be nothing but a framework filled with sandy mud. Probably it was constructed as a protection to a spring. At the present time, springs in small

streams are guarded in this way to prevent cattle from trampling on them and stopping them up. This stream apparently flowed from the north-west. At the Guildhall, as Mr. J. Terry tells us, a similar stream-bed was found in digging the foundation for the Council Chamber, and there was so much water in the ground that a table of concrete had to be prepared on which to place the building.

Aldermanbury.—The site on the east corner of Aldermanbury at its junction with Gresham Street was dug out in the early part of 1908. For the most part the soil had not been previously disturbed to any great depth, and over the greater part of it was an accumulation of made-earth, which descended about 13 ft. to the natural surface, here formed of brick-earth. At the north-east corner the ground fell some few feet deeper, the lower part being filled with black mud, in which were piles in a sloping position as if supporting the bank of a stream. As this ran under the adjoining property it was not possible to examine it to any extent (fig. 25). The outer portion of the site was overlaid with a thickness of about 4 ft. of brick-earth; below this were 5 ft. of gravel resting on the London clay, which was reached at about 22 ft. from the surface.

Several Roman rubbish pits were found in the brick-earth. Two of these, about 3 ft. in diameter, were under the building line in Gresham Street. They extended to a depth of 19 ft., entering the gravel for about 2 ft. They were filled with black mud, and contained only a few fragments of Roman pottery and a quantity of oyster shells. The brick-earth appeared to have been dug for use, and there were indications of large fires on the surface as if bricks had been burnt there. A well was found in the north-east corner, which was carried to a depth of 23 ft., passing into the clay. Its lower portion was lined with Kentish rag, and rested on a circular frame of wood in four sections, halved together and fastened with wooden pins. The upper part above the brick-earth was built of brick, being slightly set back from the stone, and possibly of later date. There was nothing to show that this well was of any great antiquity. In the black mud at the north was a brick culvert, and in it were found some seventeenth-century pottery and the blade of an iron dagger.

Fountain Court, St. Lawrence Jewry.—In digging for foundations at the east end of this court in 1911, immediately north-west of the church, a deposit of black mud was found 14 ft. 6 in. below the present surface (fig. 25). It was 2 ft. 6 in. thick, and rested on the gravel. The depth dug was 21 ft., or 4 ft. into the gravel, and the water rose in this to within 9 in. of the top of the gravel. No objects were found. Sir Christopher Wren, when he erected a new chancel to this church,[1] had to drive piles 12 ft. deep for a foundation after digging for 7 ft., and, as the marsh

[1] *Parentalia*, p. 265.

extended so far to the south, he concluded that Cheapside was the northern limit of Londinium. He, of course, did not recognize the fact that the marsh was of late formation.

It seems that originally several small streams existed in this neighbourhood. The indications noticed at Aldermanbury and Fountain Court would connect themselves with Wren's discovery at St. Lawrence Jewry, thus forming parts of a branch which might have joined the stream flowing under the Guildhall, Coleman Street, and the west end of Lothbury (fig. 25). The hollow ground traversed by these streams ultimately filled up when the district became swampy.

Fig. 25. Plan showing discoveries of streams in the vicinity of the Guildhall.

In places the old surface stood high enough not to be affected by the change, as at Aldermanbury, where the brick-earth rose to 13 ft. below the present street level, and there was little indication that it had ever been covered by the marsh.

Bond Court.—In 1908 an excavation was made in the north-east portion of Bond Court. This spot is on the east bank of the Walbrook. Clay was found at a depth of 22 ft. below the present surface. The soil overlying it was a river deposit, much of it being black mud and sandy silt, in which were many Roman relics, including the base of a terra-cotta figure (fig. 11, pl. LXIX), the top of a gutturnium, the handle of an amphora, and base of a slip-painted pot and a glass

drop or tear. There was also some medieval walling, which we need not describe here. This site is important on account of three fine pieces of sculptured work said to have been discovered close at hand. They were bought by Mr. W. Ransom some years ago. Owing to the fact that one of these 'is adorned with a representation of the Mithraic sacrifice and appropriate adjuncts',[1] Professor Haverfield suggests the probability of a Mithraic chapel having existed here,[2] but no remains of any building have as yet been found.

In our previous paper we drew attention to the evidence that it was the partial stoppage of the Walbrook by the Roman city wall that caused Moorfields to become a swamp, and this appears to be now generally accepted, but there is occasional misunderstanding among those who have taken up the subject of Roman London. Thus an instance is given in the *Victoria History*[3] of a child-burial in Moorfields associated with jewellery and a gold coin of Salonina, wife of the emperor Gallienus (253–68), and the following comments are made on it: 'The interment would have been made before Moorfields became a swamp, and consequently before the building of the wall.' We venture to suggest that the conditions which would naturally occur by the gradual checking of the Walbrook have not been altogether realized. It is not to be supposed that the swamp immediately followed as a consequence of the building of the wall. According to the evidence, provision was made for the passage of the stream, and for years it must have flowed freely after the inwalling of London. During this time Moorfields remained in a comparatively dry and well-drained condition. When at length the culverts became blocked it is still improbable that Moorfields was at once wholly covered with swamp. As the hollows filled up with the silt brought down by the checked stream, the swamp would have gradually attained greater proportions, but its full extent appears to have come about much later, and there is every reason to think that many of the higher parts of the broken ground never became marshy during Roman times.

Professor Haverfield, in his recent paper,[4] in which he ably summarizes the information that has accumulated concerning Roman London, seems doubtful whether the stoppage of the Walbrook took place before or after the departure of the Romans. On this subject we would remark that the bed of the Walbrook, both north and south of the wall, has shown a considerable deposit of river silt and peaty growth which had formed gradually during Roman times. On the south side the peat contained kitchen-middens at varying depths, associated entirely with Roman remains. North of the wall 9 ft. of deposit also contained Roman remains and nothing else.[5] That the great increase in the extent of the

[1] *Archaeologia*, lx. 43.
[2] *Journal of Roman Studies*, vol. i, part 2, p. 167.
[3] *V. C. H. London*, i, p. 38, footnote.
[4] *Journal of Roman Studies*, vol. i, part 2, p. 156.
[5] *Archaeologia*, lx. 174–5.

swamp on Moorfields took place during the early Saxon period, when in all probability London lay fallow, we are quite prepared to believe.

It is, perhaps, needless to say that the relics of pile structures in the bed of the river near the wall dated from the Roman period. In two recent publications[1] Sir Laurence Gomme, naturally enough, attaches importance to the opinion expressed years ago by General Pitt-Rivers, then Colonel Lane-Fox,[2] that these pile structures were pre-Roman. But reference to his paper will show that Pitt-Rivers came to this conclusion largely because of the occurrence of bone objects, such as pin-polishers and what are known as 'points', which in his time had not been identified. He saw that they were not Roman, and because of their rude form thought they must be earlier. Subsequent discoveries, however, have proved that they are medieval. With regard to the further evidence Pitt-Rivers says: 'Amongst the articles of human workmanship found in the peat the vast majority are undoubtedly of the Roman era.' From later exploration the nature of these pile structures has been more clearly ascertained.[3]

In the base of the Walbrook, if anywhere, one should find evidence of a pre-Roman London; no such evidence is, however, forthcoming. It is reasonable to suppose that some earlier settlement, however small, had existed on the site of Londinium, but beyond the name, the origin of which is doubtful, this is pure conjecture. The number of Celtic or prehistoric objects found in the City is very limited, and these come chiefly from the bed of the Thames. It cannot be said that any material proof of a pre-Roman London has as yet been unearthed, although indications suggesting the early existence of dwellings have occurred higher up the Thames, for instance at Battersea, Hammersmith, Kew, and Mortlake. Incidentally it may be mentioned that no pile structures have been found in the Fleet, which Sir Laurence seems to confuse with the Walbrook.

The Langbourne.

The existence of the Langbourne has long been regarded with scepticism. Stow has described its supposed course, which in his day seems to have been traditional, in the following words: 'Langborne water, so called of the length thereof, was a great streame breaking out of the ground, in Fen Church street, which ran downe with a swift course, west, through that streete, thwart Grastreete and downe Lumbard streete, to the west end of St. Marie Wolnothes Church, and then turning the course South down Shareborne lane, so termed of sharing or diuiding, it brake into diuerse rilles or rillets to the Riuer of Thames; of this bourne that warde took the name, and is till this day called Langborne warde.

[1] *Governance of London* (1907), p. 72; *Geographical Journal* (1908), xxxi. 491.

[2] *Anthrop. Rev.*, v. 71.

[3] *Arch. Journ.*, ix. 137–232; *Archaeologia*, lx. 169 85.

This Bourne also is long since stopped vp at the head, and the rest of the course filled vp and paued ouer, so that no signe thereof remayneth more than the names aforesaid.'

Tite, profiting by the observation of Kelsey, who laid sewers along this line, pointed out that there were no indications of a stream there. The ground on the ancient level rises upwards of 3 ft. from Mincing Lane to Gracechurch Street, and it is evident that the water could not have flowed up-hill. It is

Fig. 26. Plan showing discoveries of a stream crossing the traditional course of the Langbourne.

also highly improbable that any stream ran either eastward or westward along the side of a hill which declined still more rapidly towards the south. Tite recognized the possibility of a stream rising from the adjacent gravels but taking a southward course. In order to reconcile Stow's tradition, however, he suggested an artificial trench dug some feet into the gravel. Nothing to support this idea has come to light, so far as we are aware.

Evidences of a stream having run more or less at right angles to the

mythical watercourse have of late appeared at three points which would seem naturally to be connected (fig. 20). The most northern of these is at the side of St. Michael's, Cornhill, noticed several years ago when Prescott's Bank was built. More recently another section was found almost south of this, but inclining somewhat to the west under the National Bank of England in George Yard, while still further south-west, on the opposite side of Lombard Street, under the Deutsche Bank, there was a similar discovery.

Miscellaneous Discoveries within the Walls.

Bishopsgate Street.—In 1908 the public-house in the court leading to Gresham House, at the rear of 31 and 33 Bishopsgate Street Within, was demolished, and a Roman pavement of plain red tesserae was found extending over the entire site, but it had been previously destroyed in places. It lay about 6 ft. below the level of the court, which is some 3 or 4 ft. lower than the roadway of Bishopsgate Street. It had been formed on the brick-earth of the natural surface, and had become buried in similar soil to a depth of nearly a foot. Subsequently the site seems to have been used for burning bricks, as the earth covering the pavement was everywhere burnt to a brilliant red colour.

A few fragments of Roman pottery only were found.

Bush Lane.—In 1910, at no. 10 Bush Lane, a large wall was uncovered, filling the north-west corner of the site, which it crossed diagonally, continuing under the roadway in one direction, and passing under the adjoining building in the other. It was a rubble wall formed principally of ragstone set in strong mortar, and was about 9 ft. thick, the top being 10 ft. below the present street level. It went down to the ballast, a depth of 18 ft. No relics were met with.

This is probably a part of the same wall as that mentioned by Roach Smith.[1] It was not destroyed, but incorporated in the foundation of the new building.

Cornhill.—Nos. 3 and 4 Royal Exchange Buildings and 82 Cornhill were pulled down in 1910, and the site excavated for rebuilding. Much of the original soil was undisturbed, but little of interest was found. A great thickness of made-earth covered the earlier surface, which lay 24 ft. below the present street level. The original soil was brick-earth, of which 3 ft. covered the gravel. The only evidence of occupation at the original level was a large pit cut in the brick-earth and passing for 8 ft. into the gravel. Some portions of amphorae were found in the filling.

Five barrel wells were found at a higher level in the made-earth, and were apparently medieval.

[1] *Illust. Rom. Lond.*, 14.

Fenchurch Street.—In 1911 the remains of a Roman building were found at 80*a* Fenchurch Street. These lay at the back of the premises at a depth of about 12 ft., and consisted of rubble walls and a rough flooring of red tile; they were only cut through in one or two trenches, and the full extent of the remains was not ascertained. There was a quantity of pottery fragments, including some figured Samian, portions of amphorae, and some of the commoner Romano-British wares. There were also some human bones, but the age of these was doubtful. Medieval and later pottery also appeared in the upper soil.

Gracechurch Street.—In sinking an artesian well at no. 85 Gracechurch Street in 1908, a Roman wall 3 ft. 6 in. wide was met with, resting at a depth of 21 ft. below the present surface. A height of 5 ft. remained, the top of which was a bond of three tiles. Its direction was parallel with the line of Gracechurch Street.

In September, 1912, and therefore some time after the reading of our paper, the buildings on the west side of the street south of Corbet's Court, and extending to Bell Yard, were demolished, the soil being dug out to a depth of about 30ft. A fine Roman wall was found running north and south, and turning at a right angle it followed up to the western pavement of Gracechurch Street, under which it evidently passes. This wall was 4 ft. 6 in. wide, and its base was 27 ft. below the present ground level. It was built of ragstone, bonded at intervals of about 3 ft. with double rows of tiles. Two of these bonds remained; beneath the lower of them were 5 ft. of rough ragstone built on 2 ft. 6 in. of flints lightly set in occasional splashes of mortar. This foundation appeared to have been formed in a trench cut in the original surface, much as the flint and clay course was formed under the city wall. A small piece of thinner wall was afterwards found running north parallel with and close to the roadway. The discovery of the important wall running east amply confirms the observations recorded by Sir William Tite, on which he based his conclusion that Gracechurch Street could not have been an ancient highway.[1] Medieval remains were also found which will be reported on elsewhere (for plan, see p. 329, fig. 32).

On the south side of Bell Yard was another Roman Wall of slighter construction and at a higher level. It was only 2 ft. thick, and its base rested at a depth of 16 ft. 6 in., all that remained being 1 ft. of ragstone above which was a bond of two rows of tiles.

This wall was principally remarkable for the extensive amount of flint and mortar beneath its base, 4 ft. of this being uncovered, but the bottom was not reached. It was apparently built at a later period than the wall to the north and after the surface had been artificially raised.

These walls are probably the same as those mentioned in 1834 by Kelsey,[2]

[1] *Cat. Antiq. New Royal Exchange*, xii.

[2] 'A Description of the Sewers of the City of London and Liberties Hereof,' 1840. (MS. Guildhall.)

on which evidence Tite[1] pointed out that Gracechurch Street could not have been an ancient highway, as Roach Smith maintained.[2]

No. 54 Great Tower Street.—This is an interesting house built soon after the Great Fire. An old warehouse on the west side was pulled down in the spring of 1910, and at a depth of 16 ft. a few pieces of Roman pottery came to light, including plain Samian fragments of an amphora and a roofing tile. They appear to have been in a small Roman rubbish pit dug about 2 ft. into the gravel.

Leadenhall Street.—A MS. catalogue of the collection of antiquities made by the late T. C. Croker, F.S.A., has recently come into our hands, and this contains a letter from E. B. Price, dated August 20, 1846, in which he urges Croker to pay a visit to the excavations for the new premises of the Peninsula Steam Navigation Co. in Leadenhall Street, the site of the old King's Arms Tavern. He goes on to say:

'To-day the workmen have laid open a Roman pavement composed of inch-square, red-brick tesserae, which apparently extends over a large portion of the area.'

Although walls, etc., are recorded as occurring on this site,[3] the pavement referred to in this letter does not appear to have been noted. In spite of the fact that it is not a recent discovery we therefore think it advisable to add the record to our paper.

Paternoster Row.—In the autumn of 1911 the shops at the north-west corner of Paternoster Row were destroyed. The site was excavated to a depth of 18 ft., the digging being carried back about 60 ft. from the roadway, near which the ground had been a good deal disturbed. Many objects were found, from Samian to eighteenth-century pottery. At the back was medieval walling, which will be dealt with elsewhere. An account of it has been published in the *Journal of the British Archaeological Association*.[4]

St. Mary Axe.—In relaying telephone mains along the line of Bevis Marks and Camomile Street, in 1909, a Roman wall was found in the middle of the roadway, at the point where these streets are joined by St. Mary Axe. It was not wholly uncovered, the digging only exposing a part of one face and of the top, which lay near the surface of the roadway.

At the time of our visit, the trench had been partly filled up, but we were able to see that it was built of ragstone and bonded with tiles.

It ran parallel with the city wall, from which it was distant only 40 ft.

[1] *Catalogue of the Antiquities found in the Excavations at the New Royal Exchange*, 1848, p. xii.
[2] *Archaeologia*, xxix. 154. [3] *Journ. Brit. Arch. Assoc.*, ii. 340. [4] N. S., xviii. 97.

Mr. Mount Somerby, who was directing the operations, informed us that the bottom of the wall rested at a depth of 12 ft. on clay, and that in the clay were many shells.

St. Peter le Poer, Old Broad Street.—Digging took place on this site after the removal of the church in 1908. It was found that 13 ft. of made-earth had accumulated over the gravel. There were no indications of Roman buildings,

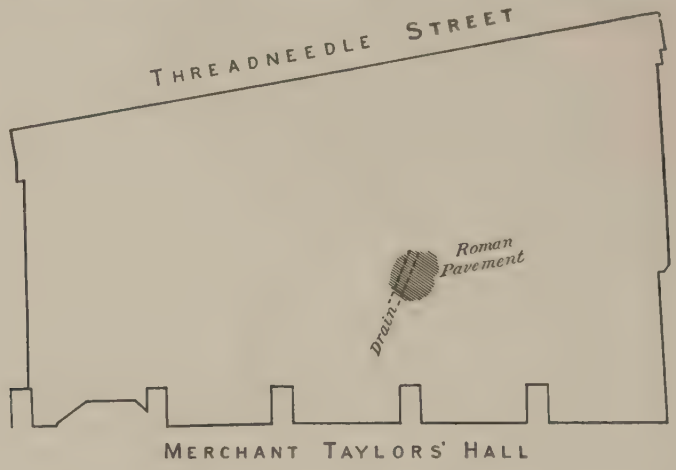


Fig. 27. Plan showing position of Roman pavement adjoining Merchant Taylors' Hall.

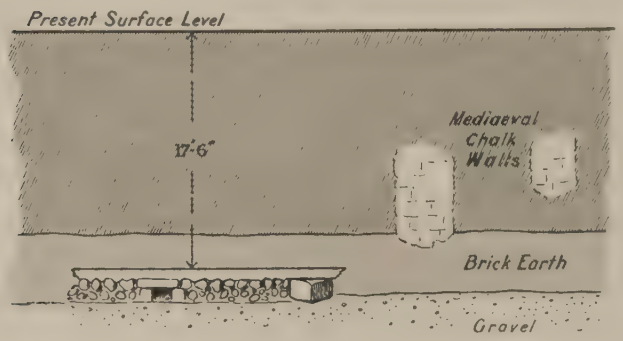


Fig. 28. Section showing position of Roman pavement and drain, adjoining Merchant Taylors' Hall.

nor were any relics observed. It may be added that during the important excavation in 1910 on the south side of Austin Friars Church, hard by where the ballast was generally reached at a depth of 12 ft. 6 in., few or no Roman relics came to light. The medieval foundations of the church on the south side were uncovered, the prominent feature being a series of chalk arches between the buttresses.

Threadneedle Street.—In 1910 the houses adjoining the Merchant Taylors' Hall on the north were cleared away and opened the hall to view on this side. As the digging for the rebuilding was developed, a series of chalk foundation arches was disclosed beneath the north wall, resembling those found at Austin Friars Church soon afterwards. The wall itself proved to be mostly medieval, the structure having evidently been repaired after the Great Fire, and not rebuilt, as we are generally told. In a large pier-hole, about the centre of the site, a Roman flooring was cut through at a depth of 17 ft. 6 in. This was formed of *opus signinum* resting on a foundation of rough pieces of ragstone and white mortar, very like the structure of the baths found at Cannon Street and the Sun Fire Office[1] (figs. 27, 28). There was not enough of this building left to enable us to say if it had served a similar purpose. Beneath the floor was a small drain with an opening 1 ft. 4 in. square built of dressed Sarsen stone, which on the inside was coated with a black deposit. There was also a large dressed stone, 18 in. by 10 in., and 16 in. high, placed under the pavement.

The whole site was remarkable for the traces of various conflagrations which had taken place there. Over the Roman flooring, and in other parts at the same level, the natural soil had been burnt to a brilliant red. This at one point near the pavement was of a thickness of 18 in. Another layer of burnt earth and ashes, 2 in. or 3 in. thick, appeared clearly in the soil over which the chalk foundation arches of the Merchant Taylors' Hall had been built. Though the Great Fire raged all round the Merchant Taylors' buildings it treated them leniently. Perhaps it was responsible for the charred condition of a wooden plate which was flush with the outer surface of the masonry of the hall about 3 ft. above the ground level.

In 1911, on the site of nos. 55 and 56, a bank next to the Post Office on the north side of Threadneedle Street, was found a layer of ashes, at a depth of 10 ft. 6 in., in which were several Samian and other fragments of Roman pottery.

Besides the miscellaneous discoveries of which we have just given a brief account, there have doubtless been many other finds of Roman objects within the city walls since the date of our last paper, but there have been no others of any importance of which we have clear personal knowledge.

Southwark.

Borough High Street.—In November, 1908, a drain was made to connect no. 52, on the west side of Borough High Street, with the sewer (figs. 29 and 30). This house is immediately north of Calvert's Buildings, there being an office (no. 50) between them, and is nearly opposite the site of St. Margaret's Church, afterwards occupied by the Town Hall, and now by the London and County Bank.

[1] *Archaeologia*, lx. 214.

A shaft was sunk, 3 ft. by 4 ft., just south of a pillar-box still standing. Almost immediately below the surface of the roadway the workmen found a number of human skeletons buried indiscriminately without coffins. This was, doubtless, part of the burial-ground of St. Margaret's, which stood on the roadway and was suppressed in 1539-40, when the priory church of St. Mary Overy became by purchase the church of the united parishes of St. Mary Magdalen and St. Margaret. The graveyard is known to have been much overcrowded. Below the level of the human remains the soil seems to have been chiefly black earth, and contained fragments of pottery, mostly Roman, but no exact record has been kept of the various depths at which they occurred. At a depth of 21 ft. a pavement was found, consisting of large roughly shaped ragstones. This was supported on piles driven into river sand. The shaft was carried 2 ft. into the sand, and it was clear that the piles had gone below this depth, but only fragments remained. In the sand the workmen came upon an almost flat stone, said to be 17 in. long by 15 in. This was broken up, but Mr. N. F. Robarts, F.G.S., who watched the excavation and wrote a short report upon it for the Croydon Natural History and Scientific Society,[1] secured some of the pieces, and considers it to have been a mealing-stone like some found at Wallington.

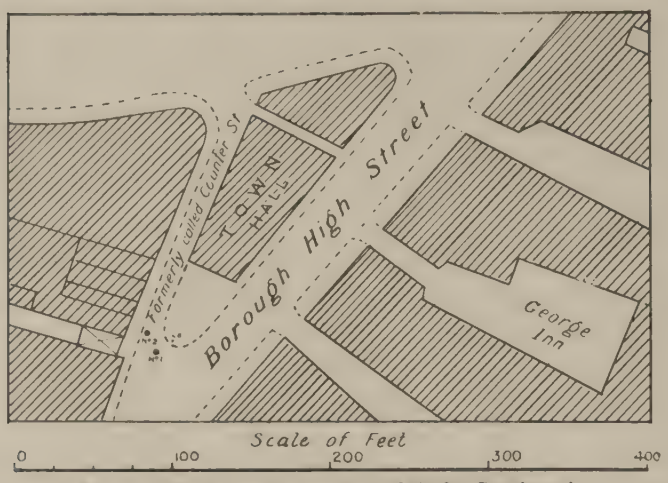


Fig. 29. Plan showing position of shafts, Southwark.

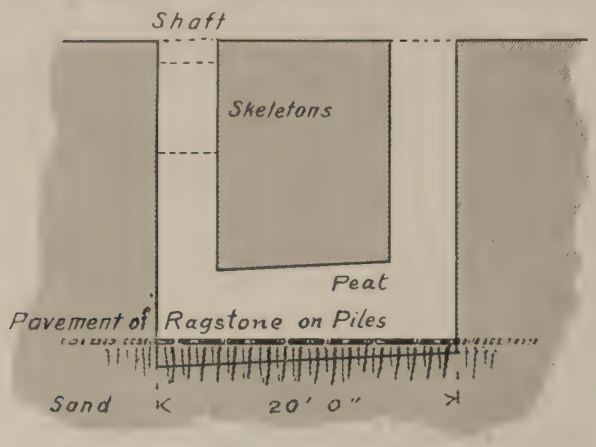


Fig. 30. Section of shafts and tunnel, showing position of Roman pavement.

Another shaft was sunk close to the pavement, about 12 ft. from the first. This was taken to a depth of 10 ft., and the two were connected by a heading, the upper part of which was in black soil. Pottery was found, most of it close to

[1] *Trans. Croyd. Nat. Hist. and Scient. Soc.* (1911), p. 44.

the Roman pavement (which was at a depth of 21 ft.) and therefore just above the sand. Mr. Reginald A. Smith kindly reported on it to Mr. Robarts. Of glazed red ware or so-called Samian one piece had the name Ponteius (no. 20, B.M. Cat.). This potter is said to have worked at Graufesenque (Dept. Aveyron), France, about A.D. 70–80. Another piece was marked Firmius (no. 33 in B.M. Cat.). He was probably of Rheinzabern in Germany, early second century. There was also the handle and rim of an amphora, a fragment of Upchurch ware, some coarser pottery, probably Romano-British, and, doubtless from a higher level, sixteenth and seventeenth-century glazed ware, details of which are given in the appendix.

For information concerning this find we are indebted to Mr. Robarts. The description is largely from his account, but we visited the site and saw the pavement and the general conditions. Mr. Robarts suggests that the site is on the old line of Stoney Street leading to St. Mary Overy's Stairs, which, as we have mentioned on a previous page, is held to have been the starting-place of a Roman ferry, the point opposite, on the London side of the river, being Dowgate.

Mermaid Court.—Mermaid Court is on the east side of Borough High Street, not far north of the later Marshalsea prison. In 1720 Strype describes it as 'indifferently well built and inhabited, having a long passage down steps to a Bowling Green by a ditch'. It took its name from one of the old inns which were so plentiful along this thoroughfare. From Mermaid Court, Bowling Green Alley runs north to Newcomen Street. Mr. Robarts has lately read a paper on the subject of a discovery there. It has just been published, but he had previously given us a note from which we cull the following information. In February and March, 1909, a sewer was made from the High Street through Mermaid Court to Bowling Green Alley. As the work advanced north the soil through which the sewer was carried became blacker and blacker. It was evidently old mud, into which numerous objects had fallen or been thrown before it had solidified. In the black soil were a good many fragments of Gaulish and Romano-British pottery. Among the rest were the handle of an amphora and fragments of Samian, bearing the following potters' marks:

VIDUCI M This mark has been found in France and Germany.

OF . POLIO

JULI TALUSSA.

Mr. Reginald Smith pronounced them to be all of the second century. There were also pointed leather soles, probably Roman, and medieval and later objects, among them several wooden bowls.

Pavement in St. Saviour's Churchyard.—A Roman pavement of plain red tesserae came to light when a trench was being dug close to the boundary of the

south-east corner of the churchyard of St. Saviour's, now Southwark Cathedral. The digging was for a new railing, in consequence of an alteration in the boundary, 6 ft. of the churchyard having been exchanged for an equal piece forming part of the present approach to the cathedral from the east.

This pavement was found to be resting on 16 in. of builders' rubbish (fig. 31), under which was a deposit of tidal clay resting on black peaty mud, the thickness of which was not ascertained. Roman pottery and glass occurred in the soil overlying the pavement, and there were distinct signs of a conflagration, much of the earth being burnt red and mixed with ashes. There were also many pieces of smooth plaster, painted red, doubtless from the inside of the building.

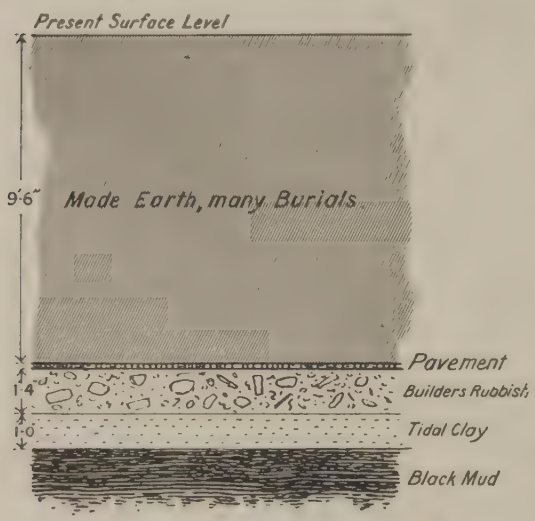


Fig. 31. Section showing position of Roman pavement, St. Saviour's Churchyard, Southwark.

This appears to have formed part of a pavement found in 1832. Both finds were at a similar depth, the earlier one having occurred on a site immediately to the south-east, probably when the church railings were first put up. Tesserae from the former find are now let into the floor at the east end of the north choir aisle of the cathedral. Some portions of those recently discovered have also been pieced together, and are now resting on a seat against the south cathedral wall.

Fragments of Roman pottery have also been found in digging for the present nave, in building the vestries on the south side five years ago, and in 1891 in making the approach to the cathedral.

Tabard Inn.—Excavations on the site of the famous Tabard Inn, or rather perhaps of the Tabard Inn Yard, were in progress quite recently. Roman pottery was found there, a Roman die, also leather soles, probably Roman. The foundations of modern buildings went down here to a depth of 7 ft.; below this there was a considerable depth of black earth containing much Roman pottery, some of which was partly buried in the river sand below. This was reached at a depth of about 16 ft. under the pavement. Mr. Robarts is getting together notes on the subject, which as yet is not fully recorded.

Discoveries at Messrs. Barclay & Perkins's Brewery.—For a record of this we are indebted to the directors of Messrs. Barclay & Co.'s great brewery in

Southwark. The excavation took place near their office, rather more than 100 ft. from that part of Park Street which bounds the Anchor brewery on the east, slightly south-west of the main eastern entrance, and about 350 ft. south of its northern boundary, also Park Street, for the thoroughfare so called forms a right angle. In May, 1912, soil was dug out within these premises for the footings of a new building due west of one of the offices. Immediately below the present ground level a thickness of 6½ ft. of made-earth was found, containing medieval and late pottery and scattered fragments of Samian ware. The workmen then came upon 18 in. of consolidated mud deposit of a bluish colour which had the appearance of washed clay. Below this there was peat 4 ft. thick, making 15 ft. in all. In this peat were a good many hazel nuts, also sticks and branches, which appeared to have been deposited by water. We observed a piece of oak, and there were doubtless other kinds of wood. At a depth of 13 ft. 6 in. three or four mortaria or portions of mortaria came to light, one of which had rushes adhering to it, and more Samian ware. A pile had been driven through the mud into the peat. Below the peat, or 15 ft. under the present ground level, running sand, full of water, was discovered. The foundations were carried down 9 ft. farther, and then a bar was driven another 13 ft., all through running sand, so that the whole depth reached was 37 ft.

A great variety of Roman and later objects came to light, of which, through the kindness of the directors, we have been able to show some specimens. Much of the red glazed ware has the potter's mark; in some cases also letters have been scratched through the glaze. A list of both is given in the appendix. On the rim of one of the mortaria is the name ·ATIOS, on another CIIRMA (?), and on a third ALBINI·F·MATUGEN. This is an interesting fact, because in December, 1808, Mr. W. Page, F.S.A., described the discovery of two Romano-British kilns at Radlett, in Hertfordshire, containing, besides other pottery, various mortaria mostly stamped with the name Castus, but one having that of Albinus.[1] It seems, therefore, tolerably certain that this Southwark example was made by the same potter. In the Guildhall Museum are three mortaria with the stamp of Albinus. They came respectively from Bow Lane, Thames Street, and from near the Mansion House. The name occurred on mortaria in Roach Smith's Museum of London Antiquities.

Messrs. Barclay & Perkins have quite a large collection of objects found at various times within the limits of the brewery. Some they have now lent to the London Museum, but the proceeds of the last discovery are intact. It would be well for an expert to study and report on the whole collection. Although during the excavations lately finished the workmen have gone to such a great depth without reaching gravel, nine years ago, when digging took place about

[1] *Proceedings*, xvii, p. 261.

250 ft. north of the present excavation, what the foreman called rock-ballast was reached at a depth of 23 ft. We should perhaps add that we have applied the word 'Samian' generally to ware of that character without always attempting to indicate the date and origin of each particular piece. This, however, is done to a large extent in the appendix.

The interest of these Southwark excavations is twofold: first, as showing the nature of the subsoil on various sites, and thereby helping to throw light on the former physical conditions of this part of South London; and secondly, as strengthening the belief that there was an early Roman settlement in the neighbourhood of the Bankside and along each side of the present Borough High Street, Southwark.

Question of Roman Amphitheatre.

It seems desirable to add a short note on the interesting suggestion made by Sir Laurence Gomme[1] that the amphitheatre of Londinium was on a particular site indicated by him in Southwark near the Bankside.

His reasons for this are twofold. In March, 1885, an iron trident, a dagger, a glazed black vase, and another Roman vessel (all but the last now in the Guildhall Museum) were found in Stoney Street, on the west side of the Borough Market, where the South Eastern Railway now runs. They were described by H. Syer Cuming,[2] who held them to be gladiatorial, and added the remark, 'Why may not Roman Southwark have had its arena for public shows under the Caesars as it did under the Tudors?' Again, in the street called the Bear Garden, running south from the Bankside, there is a small open space about a quarter of a mile from Stoney Street, not octagonal, as Sir Laurence thinks, but oblong in plan, except that one small corner is cut off. This in the seventeenth century was undoubtedly the scene of rough sports, and here Sir Laurence would place his Roman amphitheatre, where a trident and dagger might have armed opposing combatants; but the difficulties seem insurmountable.

If the late Dr. W. Rendle[3] may be taken as a guide, and on this point there is, we believe, no doubt of his accuracy, the open space referred to above is the site of the Hope theatre or later Bear-garden, built on piles for Henslowe and Meade in 1613, the ground, to judge from older maps, having before then been unoccupied.

John Taylor, the 'Water-poet', in Exchequer Depositions (18 James I) says that he remembers the 'game of beare bayting' having 'been kept at ffower severall places, (viz.) at Mason Steares on the bank side, neere Maid Lane by

[1] *Governance of London*, 1907, pp. 94, 95.
[2] *Journal Brit. Arch. Assoc.*, vol. xxiv, pp. 109–112.
[3] *Walford's Antiquarian*, 1885, vol. viii, pp. 57, 58.

the Corner of the Pyke Garden, at the beare garden which was parcell of the possession of William Payne' (site marked 'the Bowll Buytynge' on Braun and Hogenberg's map of 1572), 'and the place where they are now kept'; that place being the Hope, which had a movable stage, and was used at various times for plays, for prize fights, and for the baiting of animals.

Apart, therefore, from the inherent improbability of the amphitheatre of Londinium having been in Southwark, on the other side of a broad river, when there was plenty of open space close at hand, and no Puritanic zeal to check popular amusements, the site to which Sir Laurence alludes was not occupied by a bear garden or theatre till 1613. Thus we fear that the 'continuity of use', to which reference has been made in the *Governance of London*, is disproved by existing evidence.

Fig. 32. Plan of Gracechurch Street, showing position of Roman walls

APPENDIX I

Giltspur Street Compter.

[From Christ's Hospital Minute Books: information supplied by Mr. William Lempriere.]

1853. *May.* Christ's Hospital Surveyor reports that prisoners have been removed; materials will be disposed of, and site advertised for building: suggests purchase for Christ's Hospital.

October. City Lands Committee recommend that Compter be taken down and materials sold.

Memorial to be presented to Common Council.

November. Deputation to wait on City Lands Committee.

1854. *January.* Corporation determined to dispose of materials. Ground has frontage of about 125 ft. on Giltspur Street, and depth of about 156 ft.

May. City Lands Committee report, recommending that land be not sold to Christ's Hospital, but materials sold by auction and site let on building leases. Christ's Hospital Court to be summoned.

June. Reference back from Court considered, and Memorial to be sent.

1856. *April.* City Lands Committee willing to receive Deputation.

June. Memo. *re* Deputation in May. Newgate Street houses to be set back, thus diminishing area. Treasurer mentions that Christ's Hospital sold houses to Corporation to enable them to build the Compter.

July. Houses in Fenchurch Street to be offered in exchange.

1857. *February.* Umpire's valuation of properties. Strip to be retained by Corporation.

November 11 *and* 12. Giltspur Street to be purchased.

1858. *January.* Stock to be sold to provide purchase money (difference between value of properties exchanged).

No buildings were afterwards erected on this part of the Christ's Hospital ground except a row of shops facing Giltspur Street.

APPENDIX II

Notes on the Non-marine Mollusca, etc., found in recent City Excavations.

By A. S. Kennard, Esq., F.G.S.

Roman Ditch, America Square.

A large amount of material from the Roman ditch was forwarded to me to examine for molluscan remains. A cursory glance at it at once revealed that it was not an ordinary fluviatile deposit, whether of a stream or a marsh. It consisted of sand and fine gravel obviously denuded from the well-known gravel spread on which London is built.

There was also present a large proportion of clay, often in small lenticular masses, but as a rule diffused through the sand so that it was extremely difficult to wash through the sieve. Molluscan remains were extremely abundant. I am able to cite fifteen species.

Arion, sp. Common.
Vitrea nitida, Müll. Common.
Pyramidula rotundata, Müll. 4 examples.
Hygromia hispida, Müll. 10 examples.
Helix nemoralis, Linn. 3 examples.
Helix aspersa, Müll. 3 fragments.
Cochlicopa lubrica, Müll. 1 example.
Physa hypnorum, Müll. 8 examples.
Limnaea pereger, Müll. Common.
Limnaea stagnalis, Linn. 2 examples.
Limnaea truncatula, Müll. 1 example.
Planorbis umbilicatus, Müll. Common.
Planorbis leucostoma, Mill. Common.
Planorbis crista, Linn. Abundant.
Planorbis fontanus, Light. 2 examples.

An examination of the mollusca confirmed the previously conceived theory that the material represented not a permanent piece of water, but a ditch or pool which was liable to desiccation.

Strictly aquatic forms are represented by seven species, and of these only two, *Planorbis leucostoma* and *Planorbis crista*, attain to a fair size.

Limnaea pereger and *truncatula* are dwarfed, especially the former, in this respect contrasting greatly with the examples found on the site of the old marsh by London Wall. *Limnaea stagnalis* is represented only by two young examples. Similarly with the *Planorbes*. *Planorbis umbilicatus* and *Planorbis fontanus* are either young or dwarfed. *Physa hypnorum* and *Planorbis leucostoma* are noted for their presence in ditches liable to desiccation; whilst the land shells and slugs all point to the same conclusion. A small series of molluscan remains was also found just above the Roman ditch, but of late Roman age. Five species are represented.

Vitrea cellaria, Müll. 1 example.
Vitrea nitida, Müll. 1 example.
Pyramidula rotundata, Müll. 4 examples.
Helix aspersa, Müll. Common.
Helix nemoralis, Linn. Common.

All of these are land shells, thus indicating that the ditch had become dry, though it should be noted that *Vitrea nitida* always occurs in damp places, showing there was water at no great distance.

All Hallows Bastion.

From the excavations at the bastion south of New Broad Street, a large series of molluscan remains of Roman age was forwarded, as well as some material from the Roman ditch there. From this I am able to make a list of no less than twenty-three species, viz.:

Arion, sp. Several granules.
Vitrea cellaria, Müll. 3 examples.
Vitrea nitida, Müll. 4 examples.
Vallonia pulchella, Müll. 1 example.
Pyramidula rotundata, Müll. 2 examples.

Hygromia hispida, Linn. 1 example.
Helix aspersa, Müll. Common.
Helix nemoralis, Linn. Common.
Helicigona arbustorum, Linn. Common.
Cochlicopa lubrica, Müll. 4 examples.
Jaminia muscorum, Linn. 1 example.
Coecilioides acicula, Müll. 1 example.
Carychium minimum, Müll. 2 examples.
Succinea elegans, Risso. 3 examples.
Physa hypnorum, Linn. 2 examples.
Limnea pereger, Müll. Common.
Planorbis corneus, Linn. Common.
Planorbis leucostoma, Mill. Common.
Planorbis contortus, Linn. Common.
Planorbis crista, Linn. 7 examples.
Planorbis umbilicatus, Müll. 6 examples.
Planorbis vortex, Linn. 2 examples.
Planorbis nitidus, Müll. 1 example.

Examples of caddis-worm cases also occurred.

From an example of *Helix nemoralis* I extracted the spiculum, which is extremely scarce in a fossil state. The material from the Roman ditch was of the usual marsh character, and the presence of such a form as *Planorbis corneus*, well developed, clearly shows that the water was permanent and not temporary, whilst all the land shells are such as occur in damp situations. Two species, *Coecilioides acicula* and *Jaminia muscorum*, have hitherto not been recorded from any Holocene deposit in the city of London.

Cloak Lane.

The excavation at Cloak Lane was to a certain extent disappointing, for the Roman level was not reached, the lowest part touched being in all probability of the twelfth or thirteenth century.

The upper part of the section consisted of made earth, and judging from the colour and condition it was formed of sieved brick rubbish mixed with loam. This was about 5 ft. in thickness. Immediately underlying this was a deposit about 5 ft. thick, consisting of very black earth mixed with numerous stones, bones, and a few fragments of pottery. This bed had obviously been accumulated when the stream had nearly ceased to run, and a dirty stagnant ditch occupied its site.

Beneath this was the true stream deposit of the old Walbrook,[1] consisting of washed sand and gravel, fragments of tile and pottery, bones and shells of marine mollusca. The swift-flowing nature of the stream was evident by the almost total absence of silt, and the well-rounded fragments of pottery. About 4 ft. of this bed was seen. A small fragment of delft ware occurred just at the base of the first layer, whilst two or three fragments of green-glazed pottery were noted on the second layer. All the objects found were obtained at the base of the third layer. I am greatly indebted to Mr. F. N. Haward for kind assistance whilst examining the section.

Human Relics.

Of human osseous remains only one fragment was noted, viz. a small fragment of a skull, but fragments of pottery were very numerous. Since this was a stream deposit, there was a

[1] This was close to the mouth of the Walbrook, and must have been affected by the tide for many centuries.

curious mingling of objects of various ages, but it should be noted that the characteristic Romano-British black pottery was far more abundant than that of later periods; whilst fragments of Roman building tiles were also common. Only one or two portions of pottery vessels of a later date than Roman were noted, but the presence of numerous imperfect glazed tiles was sufficient to show that the deposit was post-Norman. Several fragments of rude pottery also occurred, similar to those found in the Roman level in London Wall. But they were certainly far more abundant than in that place. In colour they were black or reddish brown badly fired, the paste being composed of clay mixed with broken shell and pounded burnt flint. It is very distinct from the pottery that is usually associated with Roman remains in London; but similar fragments have been found by myself on the site of a Roman settlement at Keston, Kent. No worked flints were noted, and only two fragments of leather certainly belonging to a boot. Objects of metal were scarce, being represented only by two nails which may well belong to any period. A whetstone of fine grained slate with a well-defined groove for sharpening a finely pointed tool was also found at the base of the third layer.

List of Vertebrate Remains.

The bones of the following animals were found:

Ox (*Bos taurus*).
Sheep (*Ovis aries*).
Pig (*Sus scrofa*).
Horse (*Equus caballus*).
Roedeer (*Capreolus capra*).
Cat (*Felis catus*).
Rabbit (*Lepus cuniculus*).

Of these the first three were fairly common, the horse was scarce, whilst the roedeer was represented only by a single imperfect limb bone, and the cat and rabbit are equally scarce.

Several bones of birds and numerous remains of fishes also occurred, besides one bone of the frog.

The history of this deposit is easily deciphered. We have first of all a quick-flowing stream into which contemporary objects were thrown, whilst objects of earlier periods would find their way into its bed from various causes. Interference with the supply of water was the cause of the stream becoming first of all sluggish and then a stagnant ditch.

This was well seen, as no sharp line of demarcation could be seen between the true stream deposit and the overlying bed.

Lastly, the ditch was filled up and a garden occupied its site, a sequence of events which will probably be found to be true of the whole course of the Walbrook within the city.

Invertebrate Remains—Marine:

Whelk (*Buccinum undatum*).
Oyster (*Ostraea edulis*).
Mussel (*Mytilus edulis*).
Cockle (*Cardium edule*).
Periwinkle (*Littorina littorea*).

Of these the first three were the most abundant, especially the first-named species. This is worthy of note, since this species was extremely rare in the excavations at the site of the London Wall Estate Offices. Of the oyster, both the small Thames estuary form and the larger deep-sea one were represented. Some of the oysters and one example of the whelk were dead shells, and were covered by the spat of oysters.

APPENDIX III

Seeds and Woods found in various London Excavations.

Identified by A. H. Lyell, Esq., M.A., F.S.A.

Seeds from Roman ditch, America Square.

Great Spearwort	? *Ranunculus Lingua*, Linn.
Common Mallow	*Malva sylvestris*, Linn.
Musk Thistle	*Carduus nutans*, Linn.
Houndswort	? *Stathys sylvatica*, Linn.
Common Persicaria	*Polygonum Persicaria*, Linn.
Broad Dock	*Rumex obtusifolius*, Linn.

Woods from Christ's Hospital.

Pit B.

Birch	*Betula alba*, Linn.
Hazel	*Corylus Avellana*, Linn.
Oak	*Quercus Robur*, Linn.
Sweet Chestnut	*Castanea Sativa*, Müll.
Willow or Poplar	

Angle Bastion.

Several large pieces of Oak.
Several pieces of Alder.

Stream-bed at depth of 25 feet.

Oak	*Quercus Robur*

Roman surface, at depth of 13 ft. 6 in.

Alder.

Copthall Avenue.

Some of the peat from the excavation previously reported on[1] was sent for examination to Mr. A. H. Lyell, who has found in it the seeds of the following plants:

Celery-leaved Ranunculus	*Ranunculus sceleratus.*
Blackberry	*Rubus fruticosus.*
Celery	*Apium.*
Common Orache	*Atriplex patula.*
Dock	*Rumex.*
Sedge	*Carex.*

[1] *Archaeologia*, lx. 231.

APPENDIX IV

Notes on the Roman Pottery and Coins.

By Frank Lambert, Esq., M.A.

Site of Christ's Hospital.

In 1909 the Postmaster-General presented to the Guildhall Museum the following fragments of 'Samian', found on the site of Christ's Hospital, which are here published by kind permission of Mr. Bernard Kettle, the Curator.

A. Figured Fragments.

(1) Three fragments of form 29, about one-third of bowl. In the upper frieze, a scroll (*Brit. Mus. Cat. Rom. Pot.*, pl. XXXVII. 26), with alternate lower spaces filled with arrowheads. In the lower frieze, elongated tongue pattern (cf. B. M., M 202).

(2) Fragment of upper frieze, form 29, scroll (B. M., pl. XXXVII. 24). Traces of wreath in lower frieze.

(3) Fragment of lower frieze, form 29. Two bands of decoration: (1) elongated tongue pattern, as in no. 1; (2) below, vertical zigzag lines.

(4) Similar fragment. Two bands: (1) four rows of arrowheads; (2) below, a wreath.

(5) Similar fragment, with scroll (cf. B. M., M 401 and 404).

(6) Fragment of form 29. In the upper frieze, traces of a scroll. In the lower frieze, two bands: (1) a wreath (B. M., pl. XXXIII. 11); (2) below, festoons, of which the two remaining contain (*a*) a swan? (cf. Déchelette, type 1004), (*b*) two smaller birds flying to left.

(7) Similar fragment. In the upper frieze, scroll (B. M., pl. XXXVI. 18). In the lower frieze, an undulating wreath (cf. Déchelette, I, pl. VII. 20). In the upper spaces, two broad leaves entwined, and a bird (? Déchelette, 1046). In the lower spaces, medallion containing a dog (Déchelette, 924). For design, but not details, cf. B. M., M 280.

(8) Two fragments, form 29. In the upper frieze, the lower space of a scroll, containing a hare crouching to right (cf. Déchelette, 954), above a row of five arrowheads. In the lower frieze, panels, filled alternately with (1) a cruciform ornament (cf. B. M., pl. XL. 2) and (2) medallions containing an eagle (Déchelette, 982).

(9) Two fragments, form 29. In the upper frieze, festoons: between them hang buds on stalks. In the lower frieze, panels, containing alternately (1) a cruciform ornament and (2) pairs of flying birds facing inwards (cf. Curle, *Newstead*, p. 213, 9–11).

(10) Fragment of form 29. In the upper frieze, part of a panel filled with vertical zigzag lines. In the lower frieze, a band of S-shaped ornament (cf. B. M., M 44) between two wreaths.

(11) Fragment of upper frieze, form 29, with panels containing (1) diagonal zigzag lines, (2) a dog running to right (cf. Déchelette, 916). Below the dog, a small circle.

(12) Similar fragment. Parts of two panels, containing (1) a lion? (? Déchelette, 749), (2) S-shaped ornament, as B. M., M 44.

(13) Fragment of lower frieze, form 29. Two panels containing (1) a cruciform ornament, the lower triangle filled with arrowheads, (2) diagonal zigzag lines.

(14) Fragment of form 30, including part of foot. The whole field remaining is covered with a scale-like pattern. In it, a stag's head (cf. B. M., M 330, first head, but without neck). Above, lower part of human leg.

(15) Twelve fragments of form 37, forming most of bowl except foot. Two friezes: in the upper panels containing alternately (1) three rows of arrowheads, (2) three dogs chasing a stag, in the lower, a scroll (cf. B. M., pl. XXXVII. 21). Above, egg and tassel ornament.

(16) Five fragments of form 37, about one-third of bowl. Broad scroll: in the upper spaces, buds (cf. B. M., M 280) with a smaller bud between them. In the lower spaces, (1) a hare running to right, and below it three rows of arrowheads; (2) a simplified cruciform ornament; (3) a dog running to right, and above it four rows of arrowheads; (4) same as 2. Above and below scroll, wreaths (B. M., pl. XXXIII. 16 and 10). Above all, egg and tassel.

(17) Five fragments, joined, of form 37 (fig. 33). Two friezes. Upper frieze: festoons, each containing a bird looking backward, alternately right and left; between each festoon, a narrow leaf. Lower frieze: parts of a lion and a stag galloping to left; field filled with tufts. Above, egg and tassel moulding.

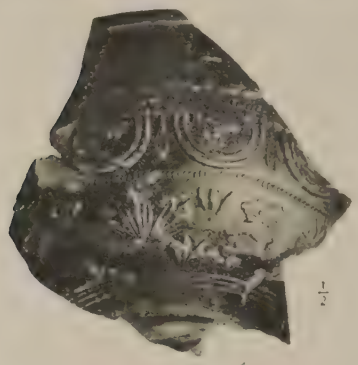


Fig. 33.

(18) Fragment of form 37, with part of lower of two friezes: lower space of a scroll, filled with arrowheads. Above, a wreath (B. M., pl. XXXIII. 16). Below, band of S-shaped ornament, as on no. 10.

(19) Similar fragment. Single narrow frieze: a group of tufts (cf. Déchelette, 1151), and four dogs running to right. Above, egg and tassel. Below, a wreath (cf. B. M., pl. XXXIV. 33).

(20) Similar fragment. Part of a broad scroll, with lower space filled with arrowheads. Below, S-shaped pattern, as on no. 10.

(21) Three fragments, form 37, with broad scroll. In the upper spaces, broad leaves between pointed leaves. In the lower spaces, gladiators (cf. Curle, *Newstead*, p. 207, 1). In the corners, birds flying (cf. small birds in Knorr, *Rottweil*, Taf. XIV. 1). Above, egg and tassel.

(22) Fragment of form 37. Parts of three panels, containing alternately (1) a medallion with a cupid to right, (2) a cruciform ornament.

(23) Similar fragment, with parts of two panels, containing (1) tufts of grass, with the lower part of a human figure, (2) two birds facing, with a rosette between (cf. no. 9). Below, a wreath (B. M., pl. XXXIII. 10).

(24) Two fragments, with part of two panels containing (1) a *bestiarius* meeting a lion (cf. Curle, *Newstead*, p. 207, 3; Knorr, *Rottweil*, Taf. XV. 7, and *Canstatt*, Taf. IX. 1), (2) a cruciform ornament. Above, egg and tassel.

(25) Fragment of form 37, with three panels: (1) a dog running to left, and above it arrowheads and zigzag lines as B. M., pl. XXXIX. 7; (2) a man standing to left (Déchelette, 510); (3) a cruciform ornament; (4) trace of a human figure. Below, a narrow wreath.

(26) Most of foot, form 37, with traces of (1) a medallion, (2) a lower panel containing a hare running to left. Below, S-shaped pattern, as on no. 10.

(27) Part of foot, form 37, with traces of two panels, containing (1) arrangement of lines and arrowheads as B. M., pl. XXXIX. 7, (2) a human figure. Below, S-shaped ornament as on last.

(28) Fragment of form 37, with parts of three panels, containing (1) a dog running to right, and below it arrangement as on last, (2) a medallion, (3) a cruciform ornament. Below, S-shaped ornament as on last.

(29) Fragment of foot, form 37. Part of a dog running to right. Below, a wreath (B. M., pl. XXXIV. 30).

The above pieces (1–29) were probably all made in the potteries of La Graufesenque and its neighbourhood before the end of the first century A. D., when those potteries ceased to work. If any of the fragments of form 37 come from Lezoux they were made during the last years of the first century, while the potters of Lezoux were imitating the wares of La Graufesenque.

(29) Fragment of form 30. The field is divided by vertical zigzag lines into narrow panels containing (1) a row of circles, (2) a tripod (Déchelette, 1070 or 1071), (3) a wreath (cf. B. M., pl. XXXIII. 3), (4) trace of an arcade.

(31) Four fragments of form 37, forming most of the foot, with parts of panels containing alternately (1) a boar to left (Déchelette, 832), and below it a leopard walking to left looking backwards, (2) arcade containing a group of figures.

(32) Fragment of form 37, with part of a panel containing a horseman galloping to left (? Déchelette, 165).

(33) Similar fragment, with 'free style' ornament, including the tail of a dolphin or hippocamp.

The above pieces (30–33) were probably made in the potteries of Lezoux in the first half of the second century A.D.

The following piece resembles in paste and glaze the fabric of Rheinzabern:

(34) Fragment of form 37, with part of a medallion containing a male figure kneeling to right (Déchelette, 394). Below, a dog (?) running to left.

B. Plain Fragments.

The collection contains the following pieces of undecorated 'Samian':

50 fragments of form 18.
7 fragments of the form illustrated in Ritterling's *Hofheim*, Taf. VI. 2.
1 fragment of form 24.
20 fragments of form 27.
13 fragments of forms 35 and 36.
1 fragment of form 38.

All these forms were commonly made in the first century. The forms (31 and 33) which were most popular in the second century are entirely absent.

In addition the following potters' names occur on plain fragments:

	Form		Form
ADVOCISI·O	31	MARTIALIS[F]	18
BVTTVRR—	31	MA·SV·FT	31
OFCALVI	18	?MATTVRXI	18
OFCREST	18	NICEPHORF	27
OFRONTI	18	PASSEN	18
GERMANI	18	OPASSII—	18
GERMI	27	PVGNI·MA	38
HABILIS·M	?33	RVFIN·M	18
IVLLINI	18	OFRVFI	27
LEPIDIM	?18	SATTOF	18
OFLICIN	27	OFSEVERI	18
LOGIRNI	18	SILVIPARIO	18
MARSVS·FECI	18		

Here again the great majority of these names belong to the first century. Of the above potters, Calvus, Crestus, Frontinus, Germanus, Licinius, Logirnus, Mansuetus, Marsus, Passenus (or Passienus), Pugnias, Rufinus, Rufus Severus, and Silvius Patricius worked at La Graufesenque, employing the forms (18 and 27) specially characteristic of the first century. Of the potters of Lezoux, only Advocisus, Jullinus, and (perhaps) Satto are represented.

In the bed of the stream which crossed the site, at a depth of about 25 ft., were found the following fragments:

One of *Hofheim*, VI. 2.
Two of 27, one with the stamp SEVERO.
Six of 29, four showing scroll decoration, and one the stamp OFPASSEN.
Two of 37, early types, with double frieze.
One of 38, with the stamp LIBERALIS.

Of the last potter nothing seems known, but the other fragments all belong to the potteries of La Graufesenque, and were made well before A.D. 100.

It is thus clear, from both the decorated and the plain fragments of the above collections, that Roman London had reached its ultimate northern limit by about A.D. 100. The British Museum and the Guildhall already possessed a number of pieces of undoubted first-century manufacture, which had been found in the street known as London Wall. These would not of themselves be sufficient to prove the northern limits of first-century London, for it is impossible to estimate how long 'Samian' may have been in the dealers' hands before sale, or how long in the owners' hands before it was lost or broken. The present collection, however, offers a much stronger argument. Both the numbers and proportion of fragments of form 29, which probably ceased to be made about A.D. 80, are enough to prove undoubted first-century occupation of this site.

The evidence of this collection certainly suggests that the wall was built not later than the middle of the second century, and that its building was the immediate cause of the staying of the northward advance.

If therefore, as it is reasonable to assume, the line of the Roman wall represents the limits of Londinium at the time of its circumvallation, and if, as is still generally supposed, that wall was built late in the Roman occupation, we are faced with the difficulty of accounting for the cessation of northerly expansion between A.D. 100 and the date of the building of the wall. It was natural that the first advance should be up the Walbrook and its tributaries; but why did the Roman founders of London early reach the line of Christ's Hospital and London Wall, and then spread no farther?

The whole collection is very similar, as regards the proportions of the different periods of 'Samian' represented, to that from the site of the National Safe Deposit Company's premises, Queen Victoria Street, which the Guildhall Museum now possesses. In both cases there is much that can certainly be dated before A.D. 100, and nothing after A.D. 150; and in both cases a stream crossed the site on which the fragments were found.

The following are the numbers of Roman coins found on the Christ's Hospital site:

Nero (54–67)	1	Tetricus I (268–73)	4
Vespasian (69–79)	4	Carausius (286–93)	2
Domitian (81–96)	1	Allectus (293–6)	2
Trajan (98–117)	1	Constantius I (305–6)	1
Hadrian (117–38)	1	Constantine I (306–37)	1
Antoninus Pius (138–61)	1	Licinius (307–24)	3
Faustina	2	Constantine II (337–40)	1

It will be noticed that the coins between A.D. 100 and 250, as is the case with the 'Samian' fragments of that period, are proportionately rare.

America Square.

The following fragments were found by the wall in America Square:

In the Roman ditch:

A fragment of 'Samian', form 37.
The base of a vessel of grey ware.
The rim of a vessel of dark ware, containing shell grains.
Five fragments of light buff ware.

In the filling, five feet over ditch:

Fragments of 'Samian', forms 33 and 37.
A fragment of (?) New Forest ware.
A fragment of black painted ware, with granulated surface.

Fleet Lane.

Three fragments of a 'Samian' bowl, form 29, joined, forming rather more than half the bowl. In the upper frieze: large panels, containing alternately (1) a dog devouring a carcase and (2) a pair of medallions containing birds looking backwards, one to right, the other to left; these are separated by small panels filled with arrowheads. In the lower frieze: panels containing alternately medallions with (1) a bear, and (2) a pegasus; between the panels, arrowheads and waved vertical lines. Diameter at rim, $7\frac{3}{8}$ in. Found in Fleet Lane (fig. 34).

Late type of form 29, probably A.D. 70–80.

Fig. 34.

Southwark.

The following stamped fragments of 'Samian' were found on the site of Messrs. Barclay & Perkins's Brewery:

OFRON[TINI] (*Officina Frontini*) on form 18.
[? AL]BANVFE (*Albanus fecit*) on form 18.
CARILLI on form 18.

Another stamp on form 18 seemed to resemble the last few letters on the stamp of Peregrinus (cf. B.M. M 1798–9).

OFAPRO (*Officina Apronii*) on form 27.
MIO on form 27.

A stamp on form 29, identical with B.M. M 307, is apparently a corruption of SEVERIM (*Severi mana*).

Of the above potters, Frontinus, Carillus, Apronius, and Severus worked at La Graufesenque. The locality of Albanus and Peregrinus is not known, but it is extremely probable that they, like the other potters, belong to the first century. The large proportion of first-century ware from Southwark is notable, both in the British Museum and Guildhall collections.

APPENDIX V

Woodward's Houndsditch Tower

Woodward does not tell us exactly the position of the tower seen by him from Houndsditch. We get a clue, however, from the first edition of W. Maitland's *History of London*, 1739. There were still then on the land side remains of about fifteen towers, and he draws attention to three, the first of which he says positively was that referred to by Dr. Woodward. It was in Maitland's time three stories high, but 'sorely decayed', and was occupied by a baker. He adds that it was 'almost opposite the end of Gravel-lane', and that 'the door thereof within the wall is in Shoemakers' Row, fronting the passage into Duke's Place'. Shoemakers' Row must have been a temporary name for that part of Duke Street which runs parallel with the site of the wall and just within it. The passage referred to is shown in various old plans, and was immediately opposite the second bastion from Aldgate. It ran down to Duke's Place or Duke's Court Place, now St. James's Place. Maitland found another tower standing at a distance of about 80 paces south-east from this, in the direction of Aldgate, which corresponds in position with the next bastion marked in the plans. According to him it was constructed in the same manner, 'the bricks being as sound as newly laid, though the stone-work was in bad condition.' Unfortunately he does not mention the shape of these towers. In spite, however, of Gough's drawing with its 'brick interposed in the Roman manner', which may represent some late rebuilding of the front, for the side shown in Fairholt's illustration from it is altogether different, we venture to believe that these towers were originally at least of the usual shape. They are so drawn in Braun and Hogenberg's plan, forming the frontispiece of the *Civitates Orbis Terrarum*, 1572, in the well-known plan of a few years later ascribed to Agas, by Ogilby and Morgan, 1677, in Strype's plan of Aldgate Ward, 1720; and (far more important evidence) they are distinctly represented of horseshoe form in the sixteenth-century plan of the Priory of Holy Trinity, Aldgate, by J. Symons, which is now at Hatfield House. This is so accurate that from the portion of it representing the medieval church of St. Katherine Cree (with every pillar and the slant at the west end distinctly shown) we know precisely what part of the present Laudian church stands on the old foundations.[1] Symons represents the two Houndsditch bastions nearest to Aldgate as of horseshoe form. Their position is practically the same as in the other plans to which reference has been made.

Another argument in favour of Woodward's tower having been a rounded one occurs in Loftus Brock's paper[2] on a piece of the Roman wall and a bastion found in Duke Street. He describes the latter as being '20 feet south from the end of the Jewish synagogue in Bevis Marks', but this fits in with the position of no bastion appearing on the old plans. He must have confused the old Spanish and Portuguese synagogue and the 'great synagogue', Duke Street. His remark that 'this bastion was probably the same as that discovered by Maitland' would then be accurate. Maitland says that it was 'of the same manner of construction' as the tower drawn by Gough, and first mentioned by Woodward.

In the preparation of this paper help has been freely given by various friends. We are especially grateful to Messrs. Kennard, Lambert, Lyell, and Newton for their valuable contributions, and Mr. Taylor has been of great assistance in working out the plan of the angle bastion on the site of Christ's Hospital, besides granting us the use of some admirable photographs. Mr. Lambert has also been of great assistance in watching the excavations.

[1] *Trans. St. Paul's Eccl. Soc.*, vol. v, 1904. Symons's plan of the old church and that of the present church are there given side by side.

[2] *Journ. Brit. Arch. Assoc.* xliii. 203 (1887).

DESCRIPTION OF PLATES LXIV—LXIX

Map of Roman London (Plate LXIV)

Reference to discoveries

Roman City Wall

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1.	Existing fragment with bastion, Wardrobe Tower	*Present Report*	259
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3.	Foundations, 6 George Street	„ „	259
4.	Existing portion, George Street and Trinity Square	„ „	259
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10.	Sculptured stone, Duke Street	„ „	270
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12.	Flint and clay foundation, Bishopsgate	„ „	186
13.	Bastion, wall, and ditch, All Hallows Church	„ „	214
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14.	Wall in Walbrook bed, London Wall	*Former Report*	169
15.	Wall under roadway, east of Moorgate	„ „	170
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17.	Wall, three bastions, etc., site of Christ's Hospital	„ „	274
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19.	Wall, New Sessions House	„ „ „	295
20.	Wall, site of Central Criminal Court	„ „	295
21.	Tower, Old Bailey	„ „	299
22.	Medieval extension, Pilgrim Street	„ „	304
23.	Medieval extension, Queen Victoria Street	„ „	304
	(*a*) Roman wall, Playhouse Yard	„ „	305
	(*b*) Roman wall, *Times* Office	„ „	305
24.	Roman wall, 56 Carter Lane	*V.C.H. London*, 69 and „	305
25.	Medieval wall, Upper Thames Street	„ „	306
26.	Riverside wall, Lower Thames Street	„ „	309

Walbrook and Tributaries.

27.	Pile-structures, north of City Wall, Finsbury Circus	*Archaeological Journal*, vol. lix., 137, etc.	
28.	Stream bed, Copthall Avenue	*Former Report*	231
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30.	Stream bed, etc., Bond Court	*Present Report*	315
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Langbourne.

36.	Stream and walls, Cornhill	*Former Report*	223
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38.	Stream and walls, Nicholas Lane	„ „	318

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			PAGE
39.	Walls and pavement, Fenchurch Street	*Present Report*	320
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48.	Walls, Gracechurch Street	*Present Report*	320
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53.	Antiquities, Paternoster Row	*Present Report*	321
54.	Pit, etc., no. 34 Great Tower Street	„ „	321

Southwark.

55.	Pavement, St. Saviour's Churchyard	„ „	325
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57.	Pavement, etc., High Street	„ „	323
58.	Antiquities, Mermaid Court	„ „	325
59.	Antiquities, Tabard Inn Yard	„ „	326

Plate LXV

Fig. 1. Roman inscribed tile. Found in building the new Cutlers' Hall, Warwick Lane, June, 1886. While in a plastic condition a workman appears to have playfully recorded a characteristic of one of his fellows—

AUSTALIS DIBVSXIII VAGATUR SIB COTIDIM.

It has been said that this tile came from a bonding course of the city wall, but of this there seems to be no evidence.

Fig. 2. Sculptured stone found on the site of Cass Institute, Duke Street, March, 1908. Size 19 in. wide at the top, 20 in. at the base, 11½ in. high, and 9 in. thick. The meaning of the three figures carved in relief has not been satisfactorily explained. Now in the Guildhall Museum.

Plate LXVI

Fig. 1. Portion of a red terra-cotta figure of Demeter or Ceres. Found at Liverpool Street, 1872. 13⅜ in. high. Now in the Guildhall Museum.

Fig. 2. Roman altar, found at St. Bartholomew's Hospital, 1907. From that part of the Christ's Hospital site which was bought for the extension of St. Bartholomew's Hospital. Now in the London Museum. Carved in oolitic stone, and has a rude representation in relief of a human figure holding a two-pronged implement in the left hand. Size 10 in. high by 5 in. by 5 in.

Fig. 3. Roman bone pin carved with a female head. Found at St. Swithin's Lane. 5⅝ in. long. In the possession of Mr. Wheatley.

Plate LXVII

Fig. 1. Roman mortarium, found on the site of Messrs. Barclay & Perkins's Brewery, Southwark. Diameter 12½ in. For particulars, see p. 327.

Fig. 2. Small black, hand-made pot, probably of the Saxon period. Said to have been found in

the stream-deposit, site of Christ's Hospital, but the position of its discovery is not known. Diameter $3\frac{3}{16}$ in.

Fig. 3. Fragment of Roman slip relief ware, with representation of a stag. Found in street called London Wall.

Fig. 4. Large vessel of brown stoneware, found at New Broad Street. It was perfect when first discovered, but being thought of no value it was used as a 'cock-shie' by the workmen. Height $14\frac{1}{2}$ in., diameter 11 in. It has a large open mouth $6\frac{1}{2}$ in. wide, and a spout at the top in which the original cork remained. Near the base is a small vent-hole. A somewhat similar vessel is in the Pennsylvania Museum which was made at Strasburg, Va., at the beginning of the nineteenth century. It is figured by E. A. Barber,[1] who calls it a water jug or fountain.

Fig. 5. Unglazed pitcher of coarse red ware, medieval. Height $5\frac{3}{4}$ in. Found at Messrs. Barclay & Perkins's Brewery, Southwark.

Fig. 6. Plate of slip ware, seventeenth century. Diameter $8\frac{1}{4}$ in. Found in digging the bastion at All Hallows, London Wall.

Fig. 7. Medieval cooking pot with sagging base, probably thirteenth century.[2] From site of Christ's Hospital. $9\frac{3}{4}$ in. diameter, $6\frac{1}{2}$ in. high.

Fig. 8. Grey stoneware pot with blue glaze, ornament with incised rosettes and lions in relief. Diameter $7\frac{5}{8}$ in. Found under eighteenth-century houses at America Square.

Plate LXVIII

Fig. 1. Five portions of shoes found at Moorfields, (*a*) having a cork inner sole.

The following objects were all found in the city ditch filling at the Old Bailey, and formed part of the Hilton-Price collection, now in the London Museum.

Fig. 2. Part of a shoe point (?) of reticulated work. $7\frac{1}{2}$ in. long.

Fig. 3. Shoe with single transverse slash.

Fig. 4. Knife sheath with two embossed figures of lions enclosed in panels. 8 in. long.

Fig. 5. Costrel of keg shape. Remarkably fine example, ornamented with bands of scrolls and trefoil leaves. $3\frac{3}{8}$ in. wide.

Fig. 6. Knife sheath with bold, flowing ornament. $9\frac{1}{2}$ in. long.

Fig. 7. Portion of a strap with bronze studs engraved with lozenge-shaped ornaments. 7 in. long.

All these objects are probably of the Tudor period.

Plate LXIX

Fig. 1. Bronze girdle buckle and hook. From the city ditch, Old Bailey. Hilton-Price collection, now in London Museum. Full size.

Fig. 2. Sinuous horseshoe, one of two examples said to have come from the base of the mud filling of the stream, Christ's Hospital. This type of horseshoe is often associated with Late-Celtic remains, and it lasted into Roman times. It occurs at many Roman sites in this country where the Late-Celtic influence is evident, but seems to have been superseded by the Roman type. It again appears in such early Norman sites as Caesar's camp, Folkestone, and Rayleigh Castle, and may have been reintroduced at that period.[3]

Fig. 3. Bronze girdle clasp, engraved with foliated ornament. From the city ditch, Old Bailey. Hilton-Price collection, now in London Museum. Full size.

Fig. 4. Iron draw-knife or spokeshave, with two tangs, having had originally wooden handles, marks of which are shown on the rust. $16\frac{1}{4}$ in. wide. Found in the peat mud of the Walbrook at Copthall Avenue.

[1] *Salt-glazed Stoneware*, London, 1907.

[2] *Essex Arch. Soc. Trans.*, vol. xii, n.s., p. 177.

[3] *Essex Arch. Soc. Trans.*, vol. xii, n.s., p. 168.

It is stained with vivianite, but its position in the deposit was not ascertained. It is probably Roman, and resembles an object in the Devizes Museum (fig. 35) which is said to have come from the Romano-British settlement on Rushall Down[1] This type of implement would appear to have had a long range,

Fig. 35.

Fig. 36.

and with some modification has survived to the present time. We have recently found a similar object on a tool stall in Farringdon Street, but one of the tangs terminates in a loop for attachment (fig. 36). It is said to be used for shaping wooden clogs, but is now very rarely sold.

Fig. 5. Roman bronze statuette, female. Found in digging for the Tower Bridge. In the possession of Mr. Wheatley.

Fig. 6. Portion of a Roman glass bead, fluted. Found in the filling of pit C, Christ's Hospital (see p. 284).

Fig. 7. Antler implement found at the side of the Thames at Hammersmith, together with many objects of the Early Iron Age (see fig. 10).

Fig. 8. Two plates of bone, with double ring and dot ornament. Roman. Found near the base of the stream, Christ's Hospital.

Fig. 9. Bone ratchet of a cross-bow. Medieval. Found in the city ditch, Old Bailey. Hilton-Price collection, now in London Museum.

Fig. 10. Small carinated bowl of soft red ware, with indented base, of the Early Iron Age. Found at the side of the Thames at Hammersmith, where there seems to have been a Late-Celtic settlement. Remains of piles, which are said to indicate dwellings, occurred on the site. It is noteworthy that indications of pre-Roman settlements have occurred at many places along the banks of the Thames above London, but in London itself no such evidence has been forthcoming.

Fig. 11. Lower part of a Roman terra-cotta statuette. Found at Bond Court.

Fig. 12. Iron pricker and wooden sheath. Medieval. Found in the city ditch, Old Bailey. Hilton-Price collection, now in London Museum.

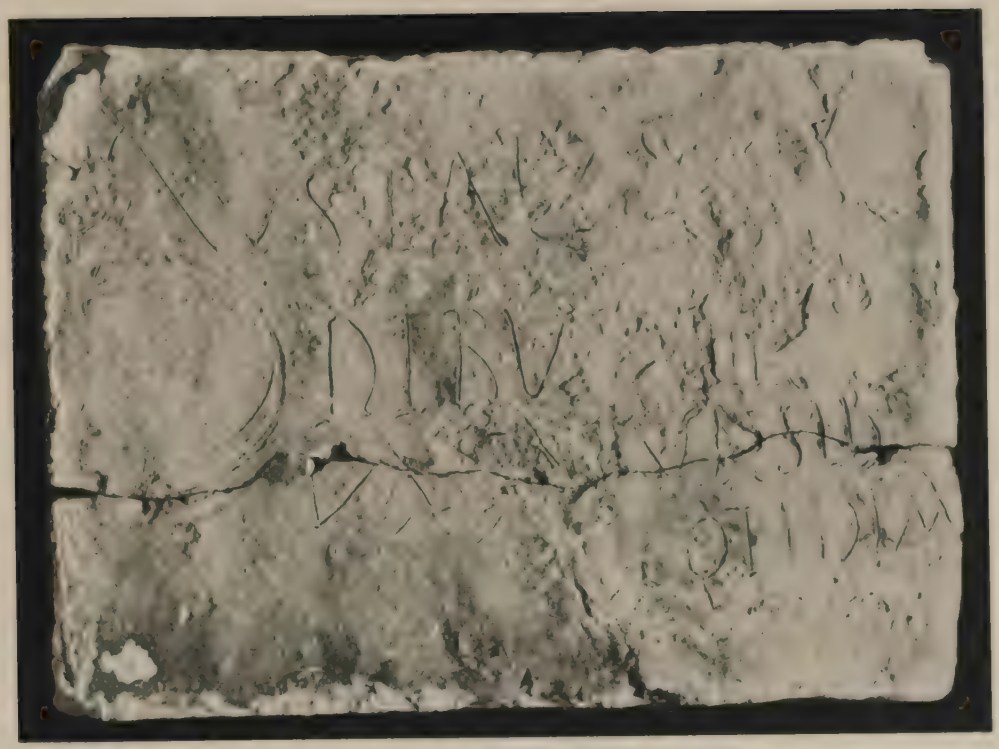
Fig. 13. Portion of a flanged tile of the medieval period, found in the deposit of the Walbrook, Skinners' Hall, Dowgate. It is partly glazed on the upper surface. The glaze, the nature of the material, and the apparently small size of the tile all pointed to its belonging to the middle ages, but this shape seemed so unusual at that period that we were for some time inclined to doubt if it were not Roman. Last year, however, in watching the demolition of the chimney conduit in Queen's Square, we found a portion of a very similar tile, except that it had no glaze, built into the masonry of this thirteenth-century structure. There is reason to believe, therefore, that this system of roofing was not unknown in the middle ages, or that at least tiles of this shape were still made for special purposes.

All the objects acquired by us during our observations have been presented to the Guildhall Museum.

[1] *Catalogue*, Museum at Devizes, part ii, p. 67.

Published by the Society

Squares of London, 1912.



1. INSCRIBED ROMAN TILE, FOUND AT WARWICK LANE, 1886

2. SCULPTURED STONE, FOUND AT DUKE STREET, 1908

Published by the Society of Antiquaries of London, 1912

Fig. 1

Fig. 2

ROMAN OBJECTS FOUND IN LONDON

Presented by the Society of Antiquaries of London, 1912

Fig. 3

POTTERY FOUND IN LONDON

LEATHER OBJECTS FOUND IN MOORFIELDS AND OLD BAILEY

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MISCELLANEOUS OBJECTS FOUND IN LONDON

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